

THE GLASGOW SCHOOL OF ART

Chin, Andrew Yee Fah (1993) Queen's Cross Church, Charles Rennie Mackintosh: an analysis of form [dissertation]. The Glasgow School of Art, Glasgow.

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**NOT TO BE
TAKEN AWAY**

QUEEN'S CROSS CHURCH
CHARLES RENNIE MACKINTOSH
AN ANALYSIS OF FORM

YEE FAH ANDREW CHIN



April 1993

Queens Cross Church CRM
16.12.92

QUEEN'S CROSS CHURCH

Designed by

CHARLES RENNIE MACKINTOSH

An Analysis of Form

Preface

1. Introduction

2. Queen's Cross Church

3. Analysis

4. Conclusion

A dissertation submitted by

Yee Fah Andrew Chin

to the Mackintosh School of Architecture

A. University of Glasgow.

B. Books and Articles

Pls April 1993

Photographs

Acknowledgements

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Queen's Cross Church is situated in the Maryhill district of Glasgow. It was built between 1897 and 1899 by John Honeyman and Keppie Architects, a prominent Glasgow practice of the period. Charles Rennie Mackintosh was employed by them as an architect and the design of the church has since been attributed to him.

It is Mackintosh's third largest built project but surprisingly it does not figure largely in any published work. As there were no known drawing of the building in existence other than the famous Mackintosh perspective (plate 1), it is unfortunate that many of these publication re-use familiar drawing and text.

As a result they do little to further understanding of the Church, if anything, they only serve to reinforce the myth that there already exist all there is to know about Mackintosh and Queen's Cross Church. This is far from the case, for there are more informative work by Thomas Howard and Robert Macleod, there is considerable amount of work on Queen's Cross Church still needing to be done.

Two studies of the Church have already been done by students at Mackintosh School of Architecture. One is a measured study confined mainly to plans and elevations and the other to its history. Therefore, this dissertation is an attempt to redress this imbalance by analysing the primary organisational factors and spatial composition of the Church. It is also a study to provide material for future students who are interested in Queen's Cross Church.

1. Introduction

The influential publication *Towards A New Architecture*, Le Corbusier propounded his philosophy by series of observation based on analysis. Four decades later, a no less important book, again largely on analysis, appeared in the form of Robert Venturi's *Complexity and Contradiction in Architecture*. Each book demonstrates the link between analysis and creativity in the resultant work and the affirmation regarding the relationship of the present to the past.

Christian Norberg-Schulz has explained how architecture has a particular ability to show how our values, how our cultural traditions determine our daily life. Only through cultural symbolisation can architecture show that daily life has a meaning which transcends the immediate situation, that it forms part of a cultural and historic continuity. The other arts are not able to fulfil this task in the same way, because they do not so directly participate in our daily existence.¹

In supporting Norberg-Schulz's view of the significance of the historical dimension. One accept that architecture has a unique cultural role and that its practicality, symbolic content and relationship with its context make considerable demands on both architect and analyst. The situation is further complicated by the intuitive nature of the design process, this denying a scientific approach to the analysis of design.

It is for these reasons that the approach to analysis outlined in this dissertation focuses not on process but on the outcome of the process. The creative act is mysterious, a mixture of logic and instinct that may extend over short or long periods of time. Many different kinds of architecture analysis are possible. Each interpretation will be coloured by the analyst's view of his subject. As a clarification of my own position, I have chosen the analytical methodology used by Geoffrey Baker in his publication *Le Corbusier: An Analysis of Form*.

This analytical approach, therefore seeks to investigate design principles by means of dissection, intending thereby to discuss design in an orderly way. The form of presentation may be thought of as showing how a design evolves in the mind of the designer; this however is not the case. As Baker believed analysis is best done as an independent study without contact or collaboration with the architect concerned.²

As a form of interpretation, analysis must be subjective and, to an extent , speculative. The subjective element is as intuitive as the act of designing, the final outcome is in view in the distance as an unformulated concept, taking its shape by exploration and experiment. Analysis starts with the whole, and by dissection, gradually reveals relationships within the work.

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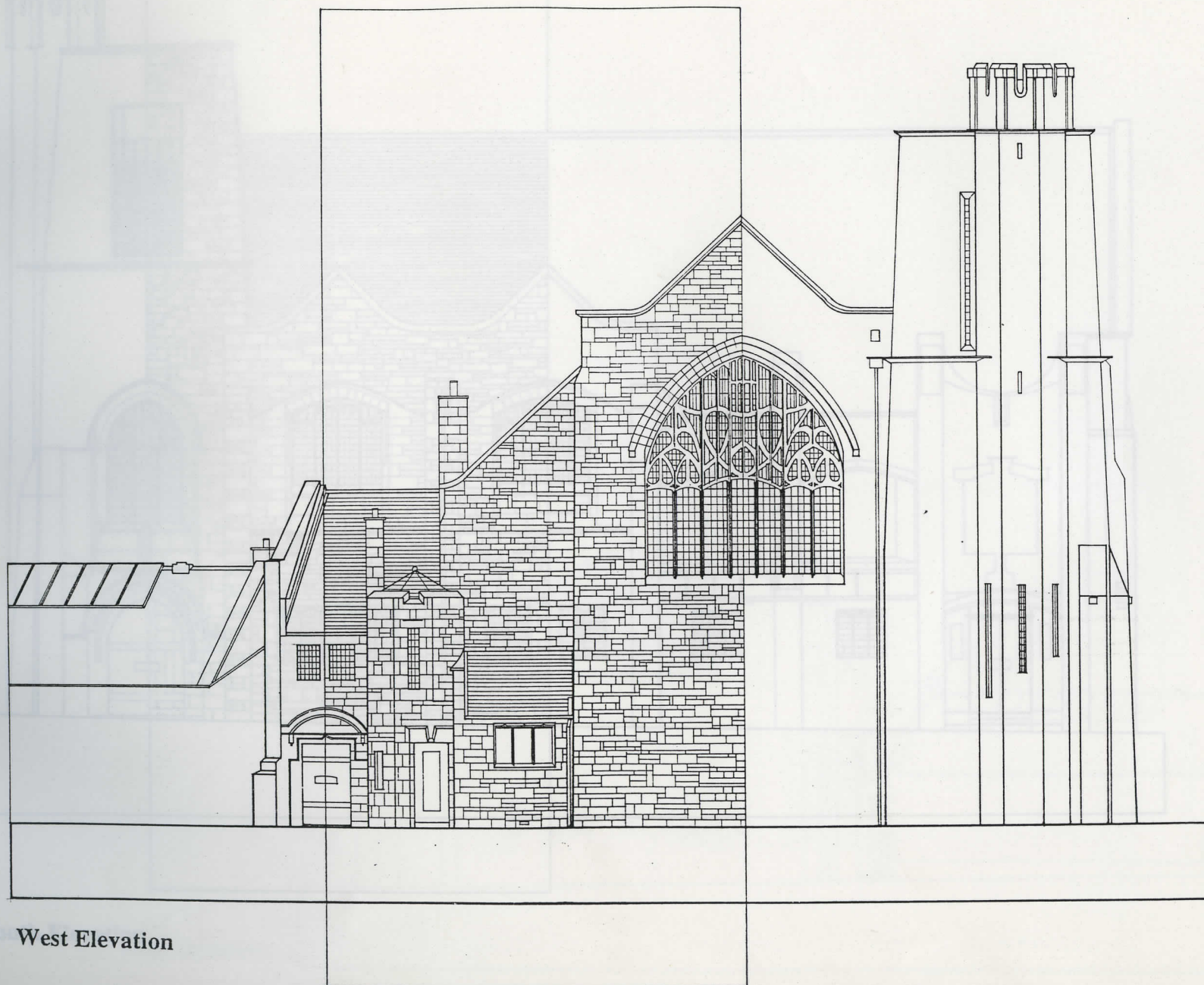
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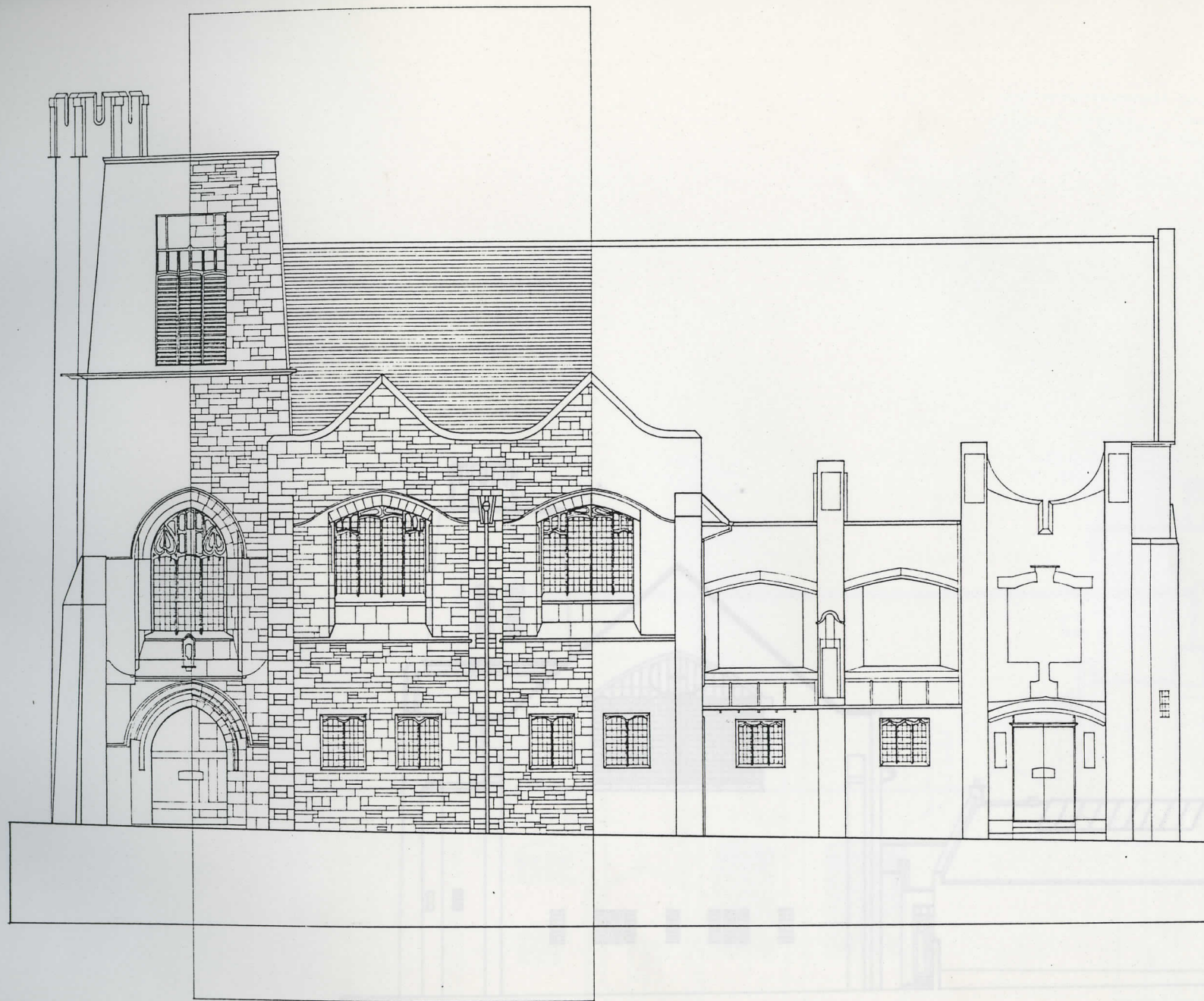
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Therefore this analytical process is almost design in reverse. These three-dimensional explorations chart the inherent energy in a design, identifying those strategies and tactics used by the designer. Like design itself, this is a process of discovery which involves to-ing and fro-ing from the whole to the parts and back again. By such means the design's structures and hidden relationships are revealed.

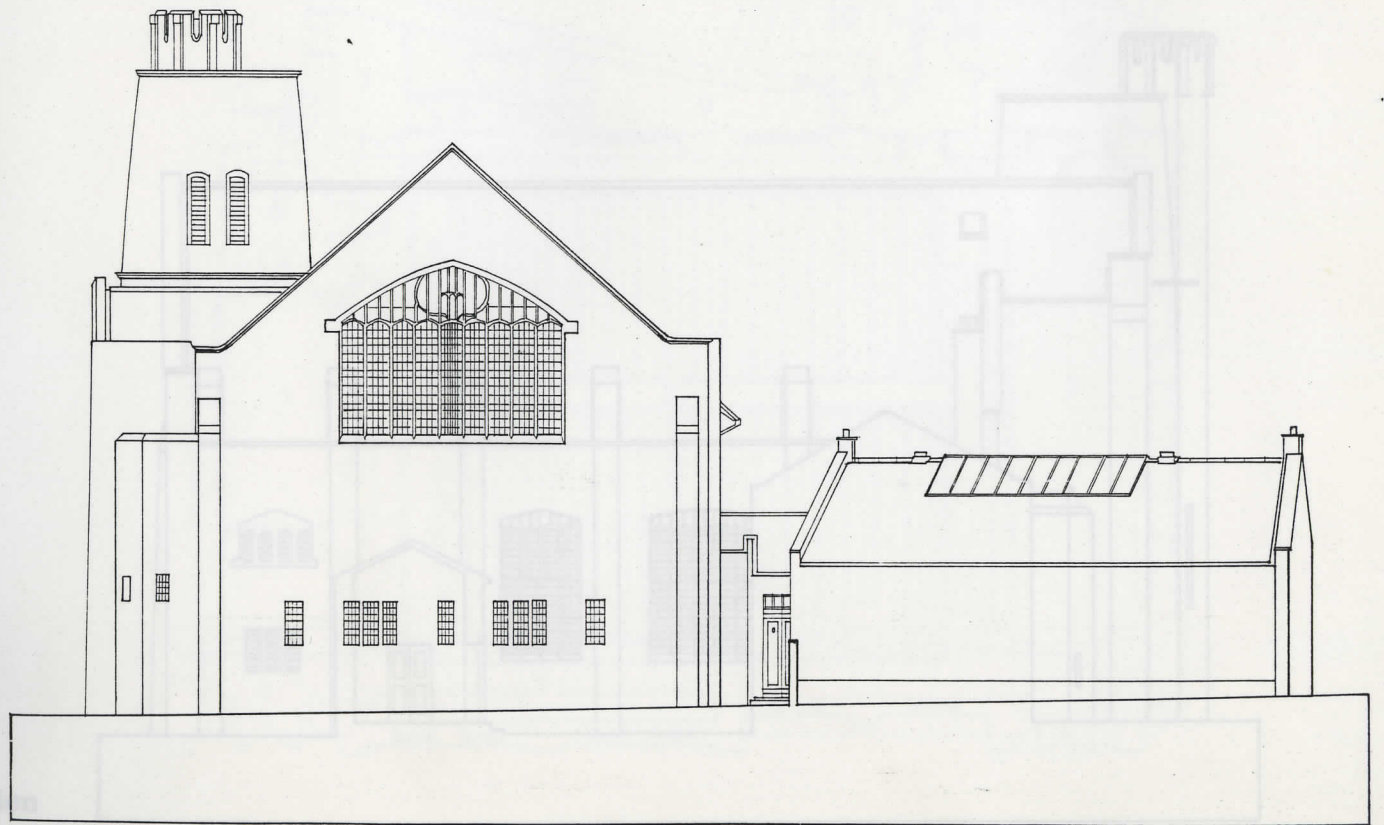




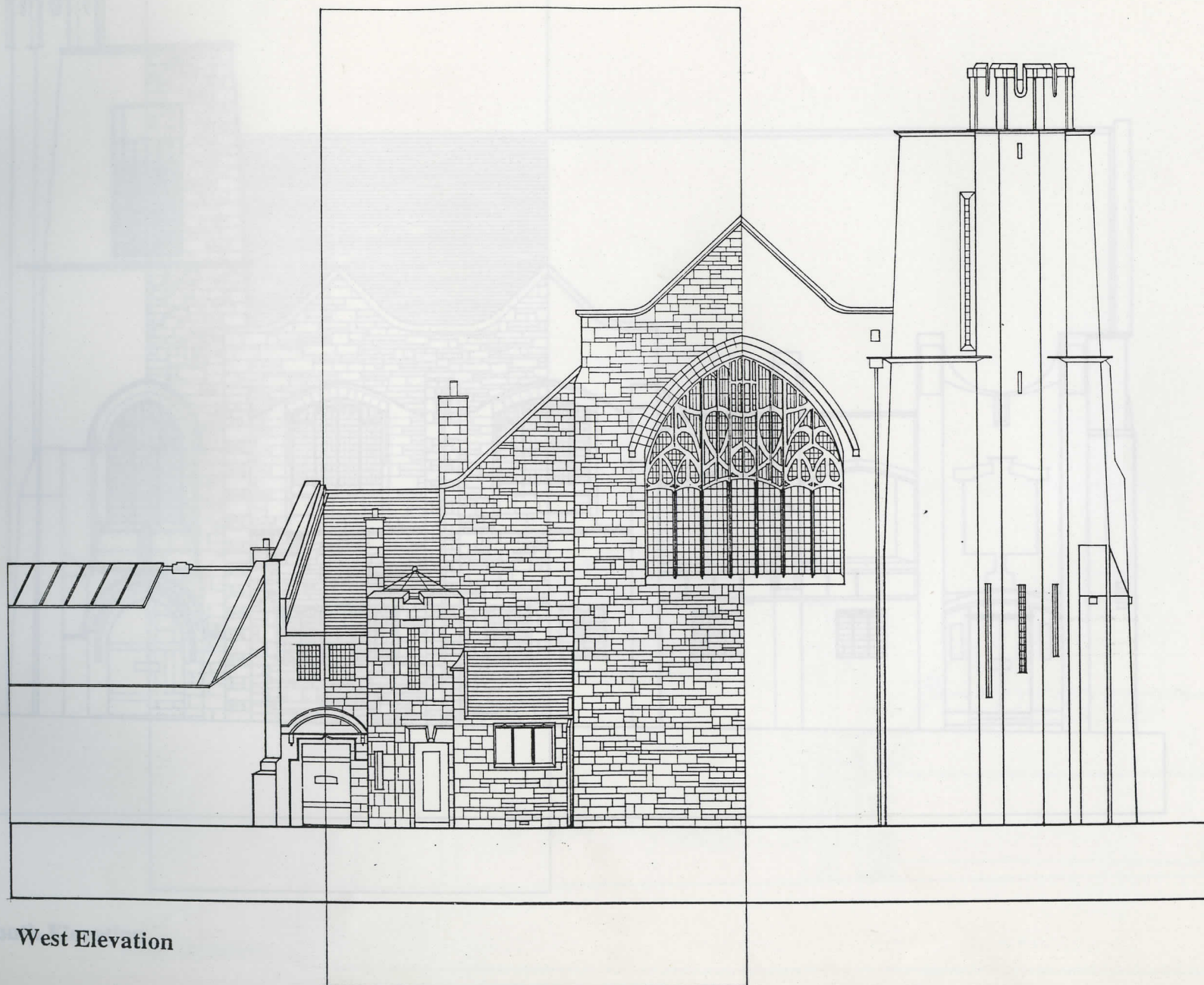
West Elevation



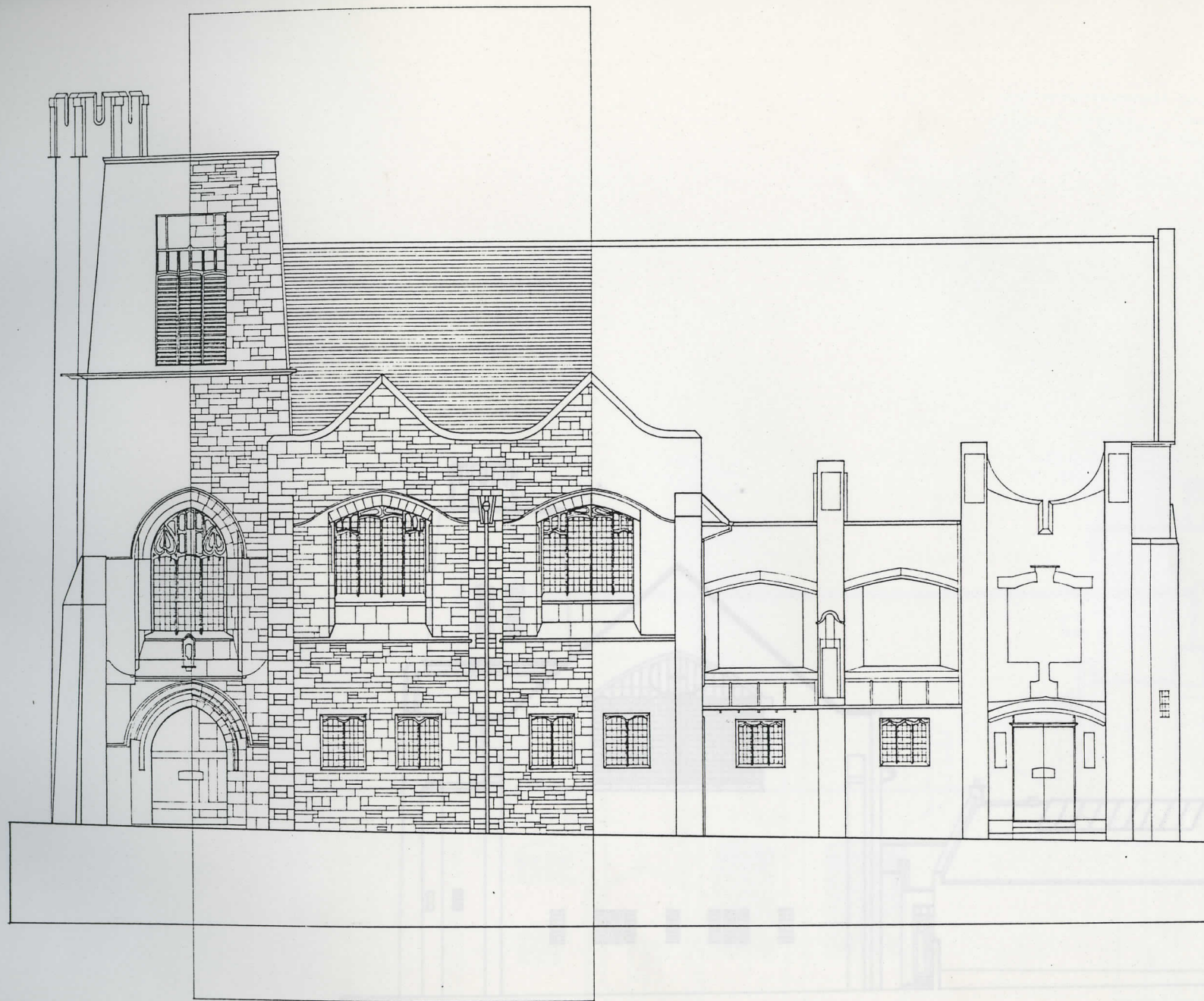
South Elevation



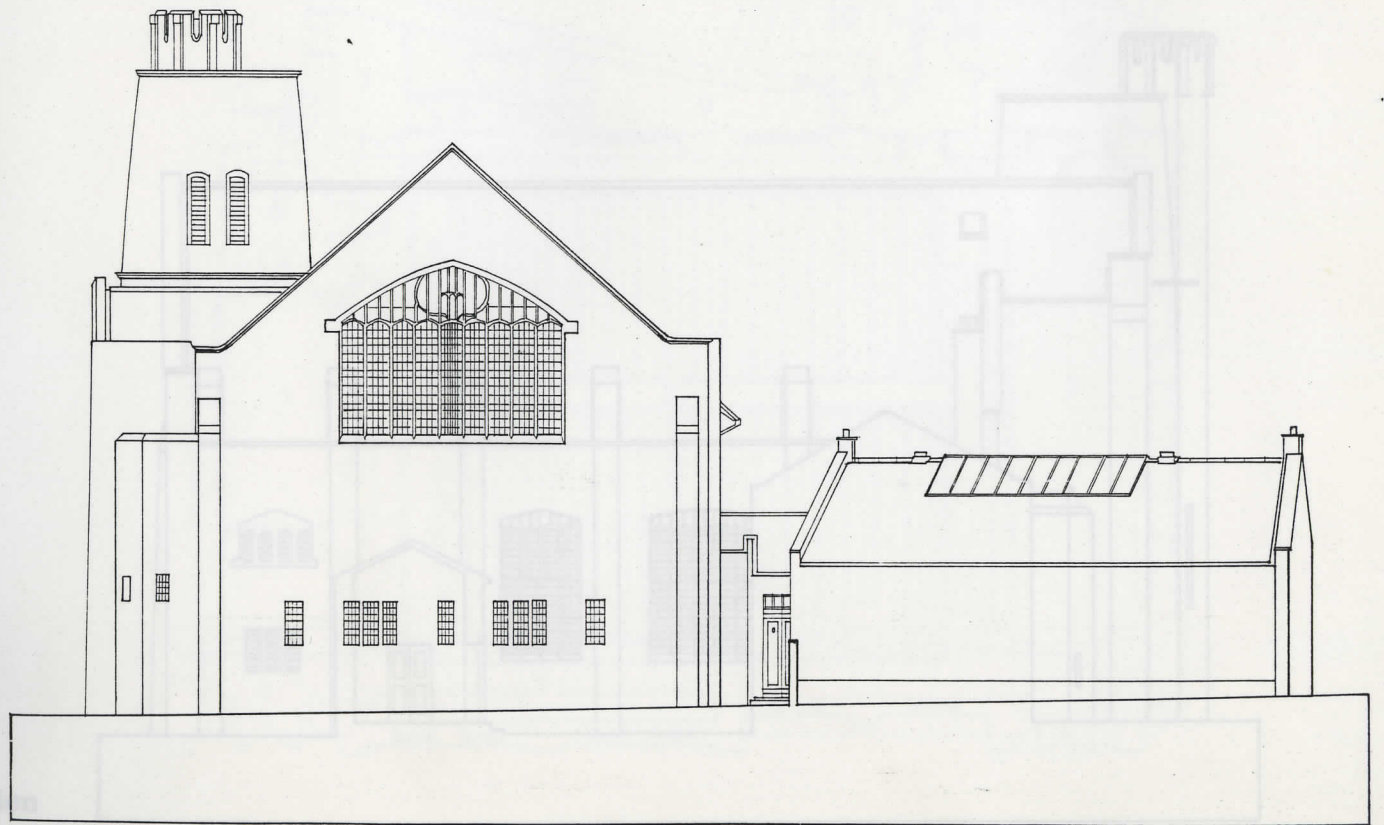
East Elevation



West Elevation



South Elevation



East Elevation

The original brief called not only for a galleried church to seat some 700 persons, but also for a separate linked hall with direct access to the street. Additional factors were the close proximity of a warehouse to the north (now demolished) and a four storey tenement block causing restricted light, especially on the east.

The initial impression is of a very traditional building. The building is ' Modern Gothic ' which is distinguished by relying neither on academic purism nor on eclecticism. It was based on the late Gothic Perpendicular Style which had only recently come into favour during that period. Queen's Cross, therefore, owes less to Scottish precedent than previous work by Mackintosh and more to the English Arts and Crafts Movement, and specifically to Leonard Stokes.⁴

Leonard Stokes (1858-1925) was an inventive architect of the English Free Style School. He designed many churches in an Arts and Crafts manner.⁵ In relation to Queen's Cross probably the most notable are two designs published in *Academy Architecture*, St. Augustine's Church, Suffolk of 1894 (plate 2) and the design of A New Town Church in 1893 (plate 3). There is a distinct similarity between the projecting eaves on St. Augustine's and those at Queen's Cross. The treatment of the gables is also remarkably similar, adopting the same shouldered treatment, as is the positioning of the windows.⁶

Another undeniable influence to Queen's Cross Church is Norman Shaw's Holy Trinity Church, Latimer Road, London of 1887, built exactly ten years before. However, a comparison of Queen's Cross Church with Holy Trinity (plate 4) shows Mackintosh's plan to be considerably more ingenious. He manage to combine a large single span roof with a more traditional aisled layout on one side and also incorporate a vestigial

transept, both of these devices considerably increasing the spatial interest of the interior and the quality of light.⁷

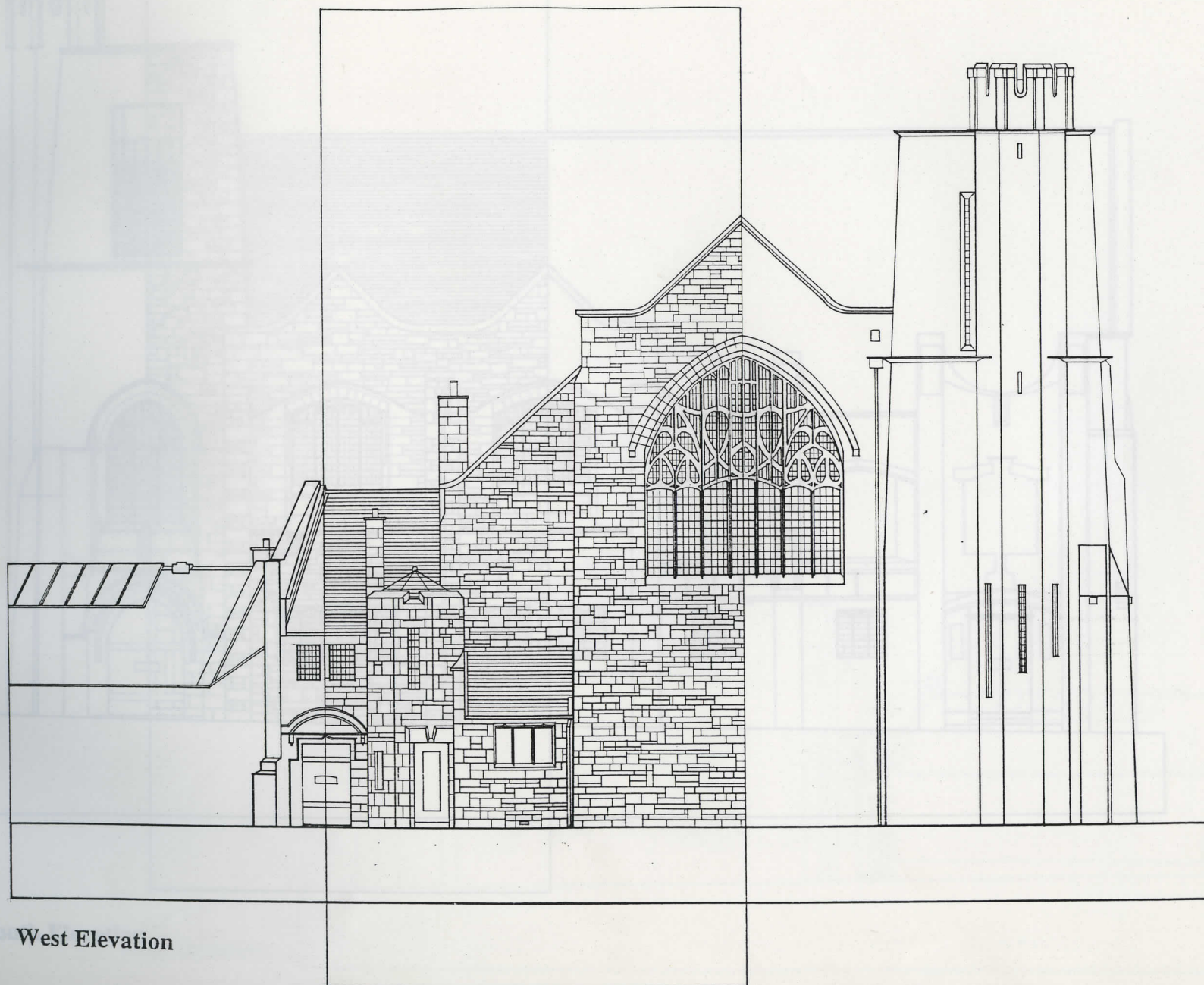
Internal elements such as the massive steel roof ties with their exposed rivets is an interesting departure for Mackintosh and is unlike any other designed by him. Where he choose to expose the roof structure the design is characterised by the total expression of all the elements as occurs in the museum of Glasgow School of Art, in the staircases of Martyrs' and Scotland Street Schools and indeed in the hall of Queen's Cross itself, a typical Mackintosh design. This steelwork also echoes the heavy industrial engineering, ship building etc. that was at its peak at that time, with Glasgow as the second Capitals of the British Empire and in the forefront of advances in industry and technology. It is also Mackintosh's only extensive use of a metal structure. It may be that the design was suggested by John Keppie.⁸

The design composition of interior wall elements plays an important role in Mackintosh's architecture. The interior north and south walls of Queen's Cross Church are covered by stained timber panels, and a picture rail at the top of them determines the height of each windows and doors opening. These picture rail is thus an important character in addition to the wall panels themselves. This composition can be seen in Japanese traditional architecture (plate 5). What is equivalent to the picture rail is *kamoi* or *Nageshi* in Japanese architecture. They are horizontal members at the same level of the walls, but the *kamoi* determines the height of openings in exterior walls, while the *nageshi* has the same role in the interior walls.⁹

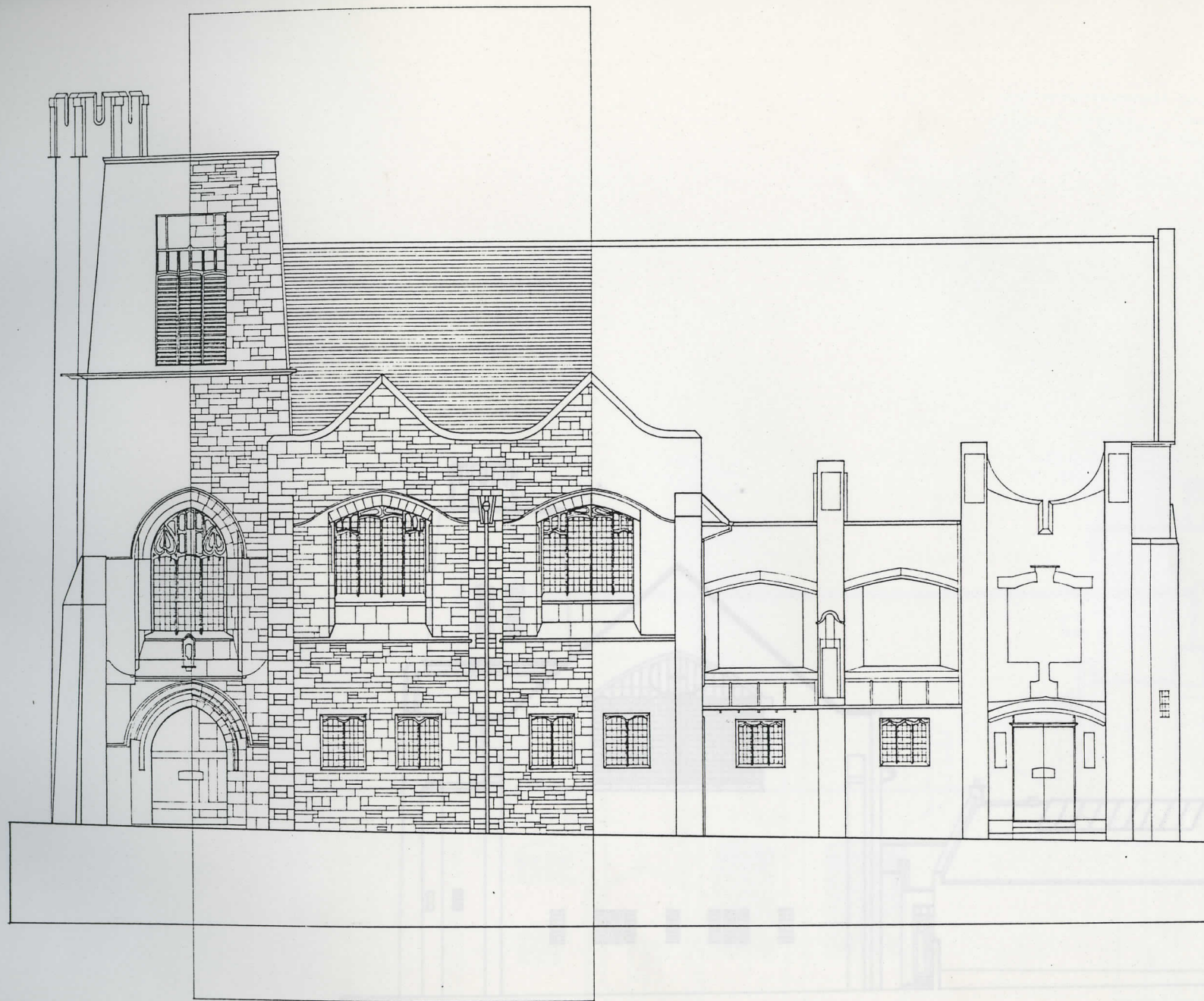
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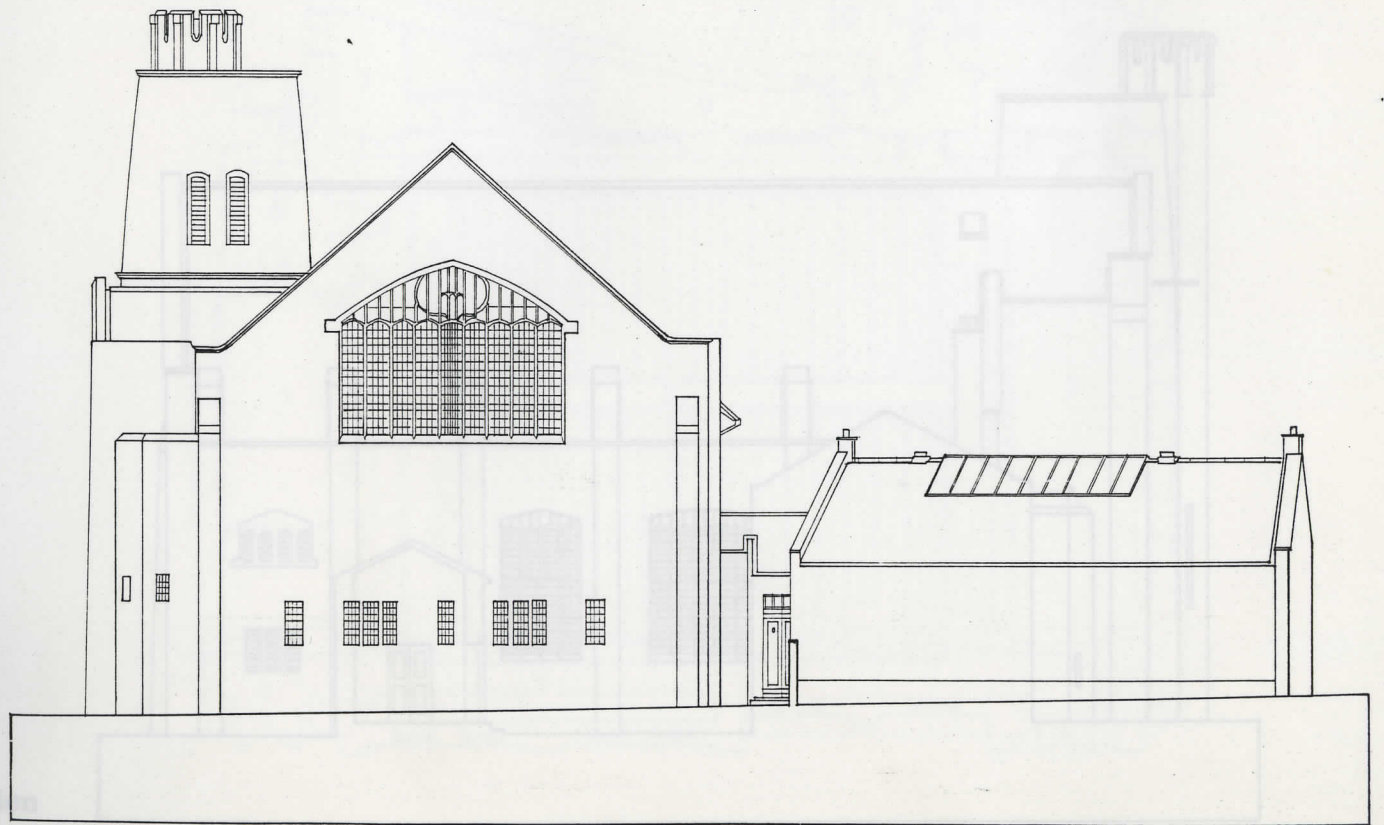




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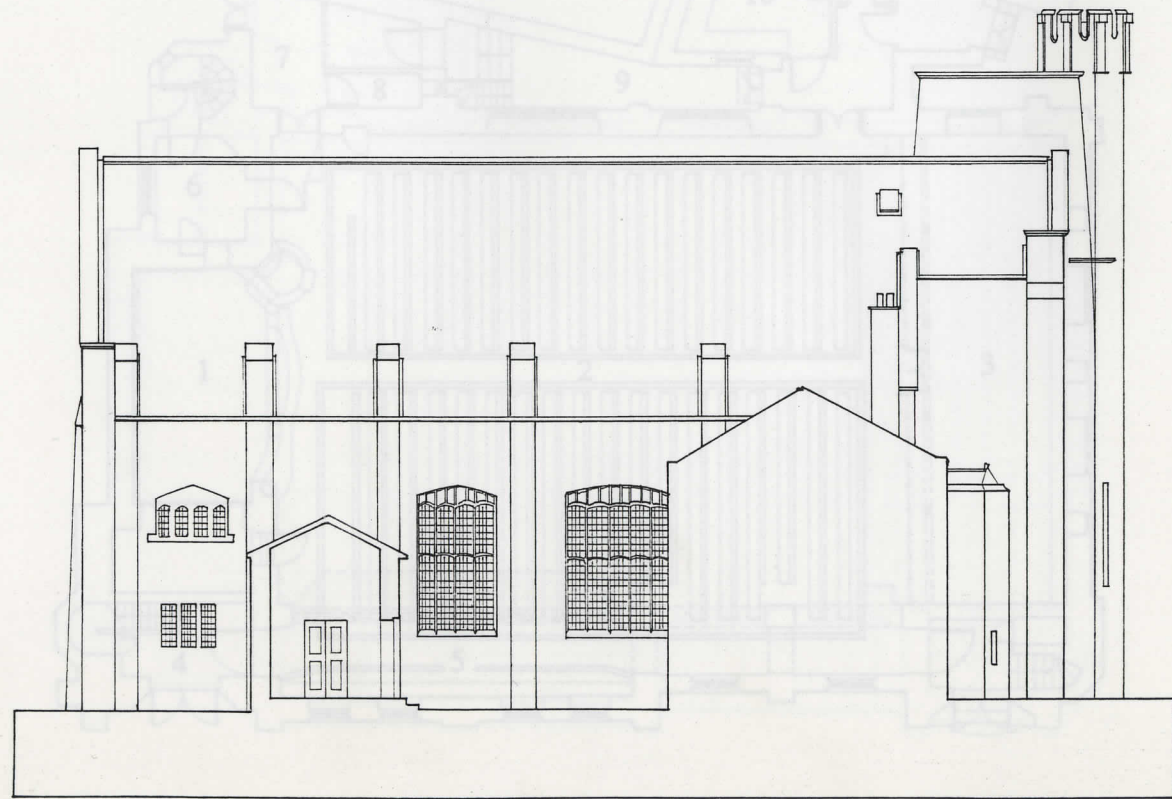
South Elevation



East Elevation

Ground Floor Plan

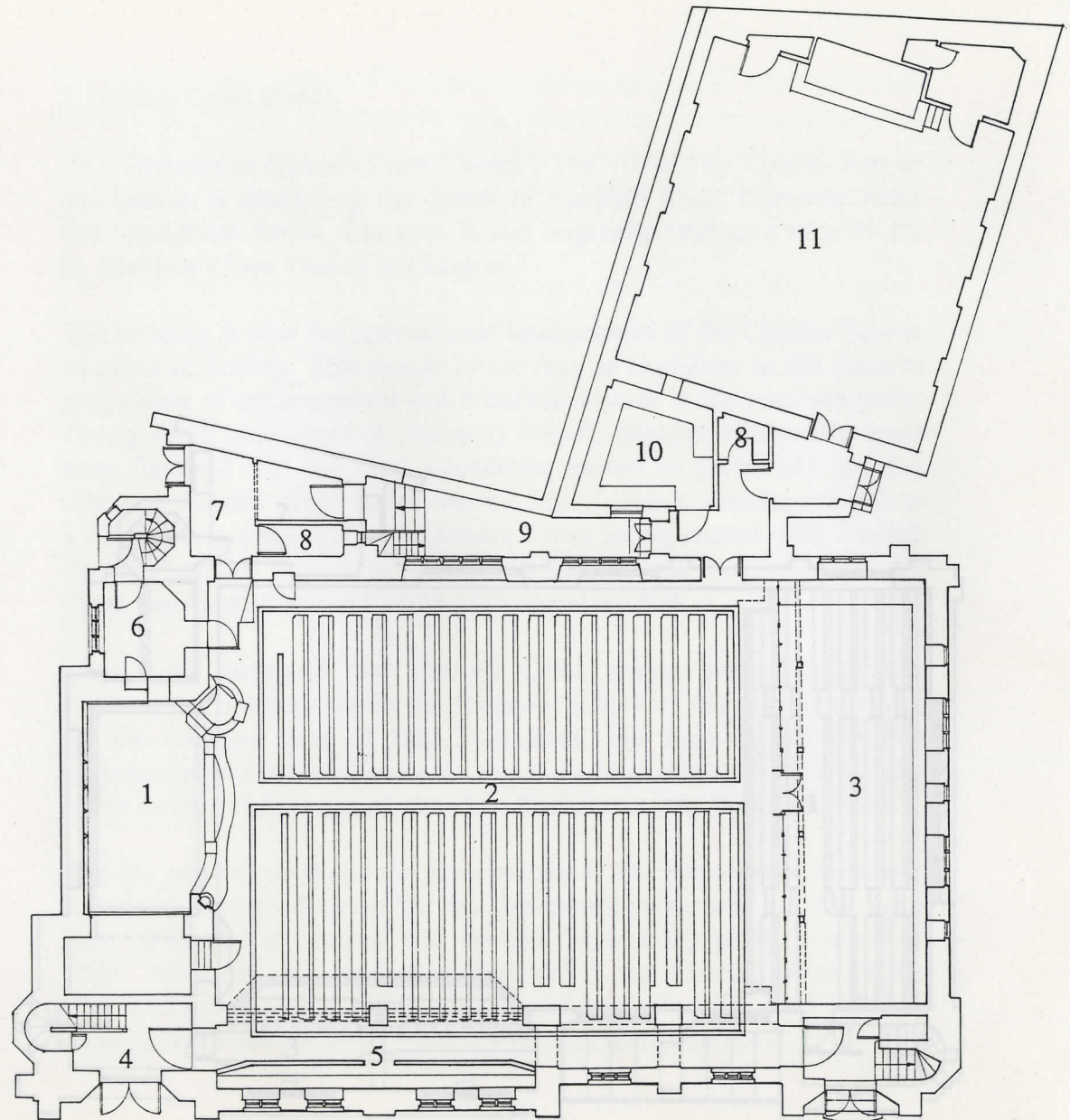
1. church
2. gate
3. gallery hall
4. vestibule
5. stairs
6. entrance hall
7. cloakroom
8. wc
9. yard
10. kitchen
11. church hall



North Elevation

Ground Floor Plan

1. chancel
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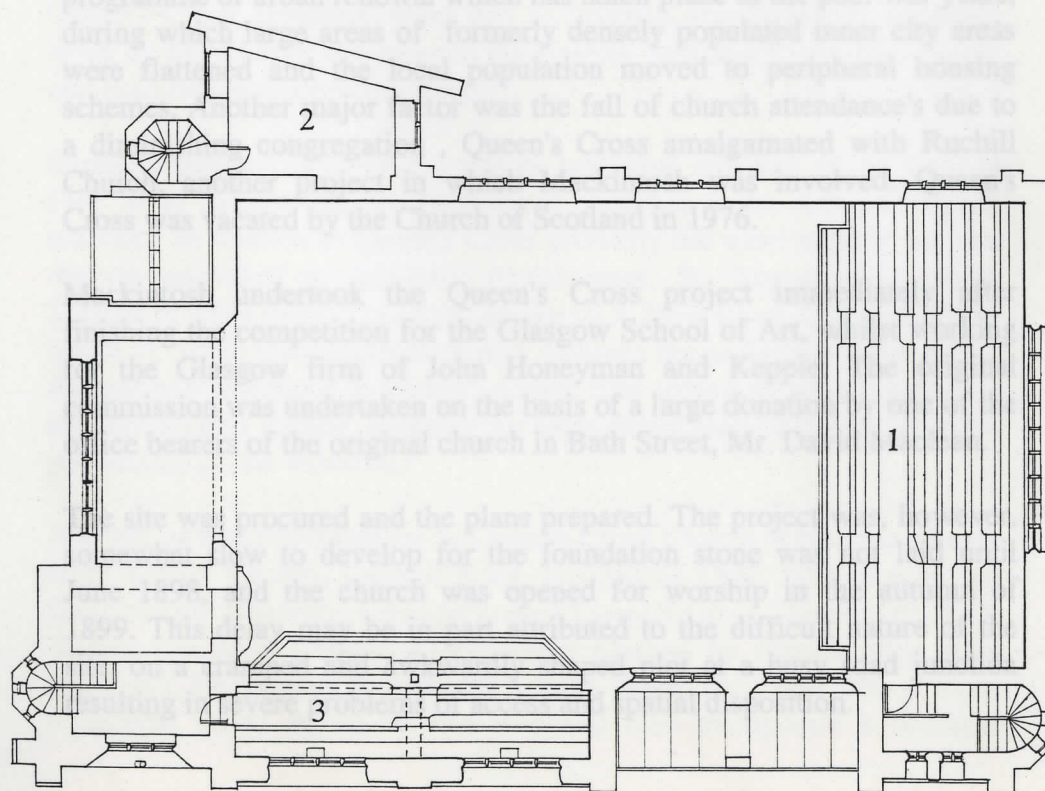
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St. Matthew's or Queen's Cross Church (1897-1899) by Charles Renie Mackintosh is situated on the corner of Maryhill Road, Garscube Road and Springbank Street, Glasgow. It was originally built as a mission for St. Matthew's Free Church in Glasgow.³

The building is now the international headquarters of the Charles Renie Mackintosh Society. This change of use may be explained by the massive programme of urban renewal which has taken place in the post-war years, during which the areas of formerly densely populated inner city areas were flattened and the population moved to peripheral housing schemes. The major factor in the fall of church attendance was due to a declining congregation. Queen's Cross amalgamated with Ruchill Church and was absorbed by the Church of Scotland in 1976.

Mackintosh undertook the Queen's Cross project in response to a competition for the Glasgow School of Art. The Glasgow firm of John Honeyman and Keppie was the successful submission and the mission was undertaken on the basis of a large donation of space bequeathed by the original church in Bath Street, Mr. David

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The site was procured and the plans prepared. The project was, however, somewhat slow to develop for the foundation stone was not laid until June 1898, and the church was opened for worship in the autumn of 1899. This delay may be in part attributed to the difficult nature of the site, on a cramped and awkwardly shaped plot at a busy road junction resulting in severe problems of access and spatial disposition.

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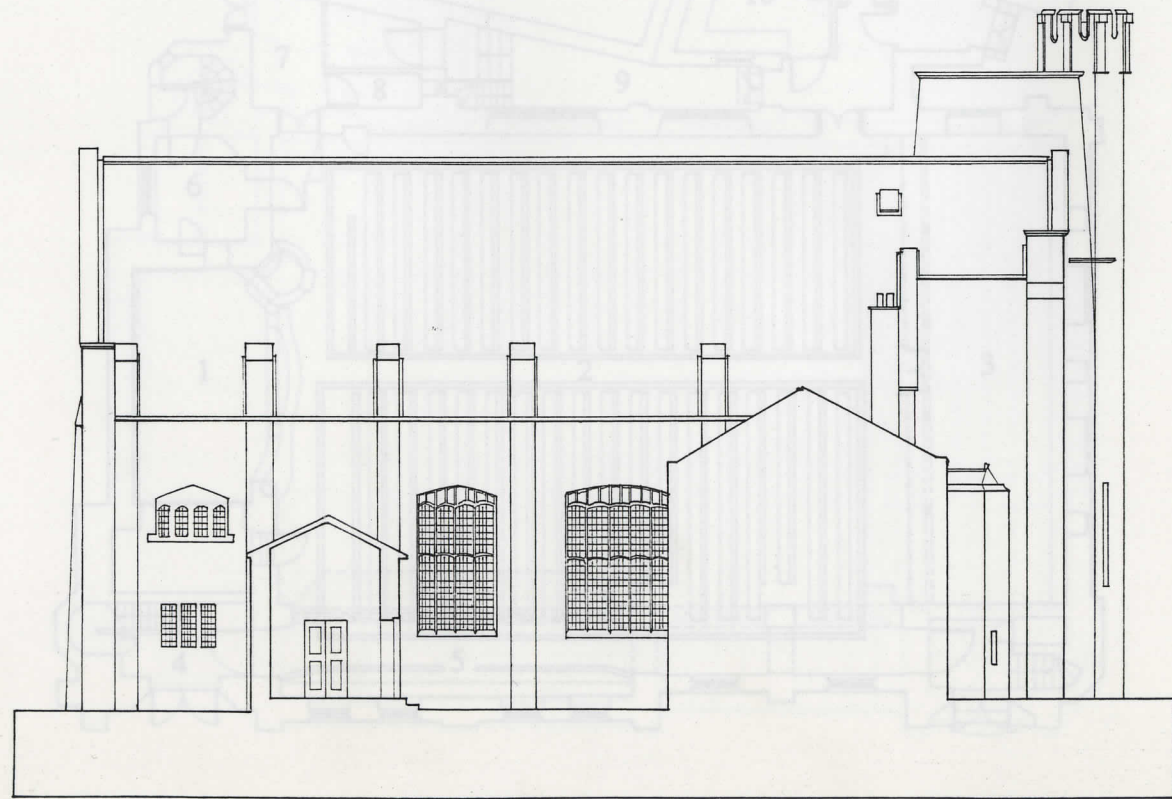
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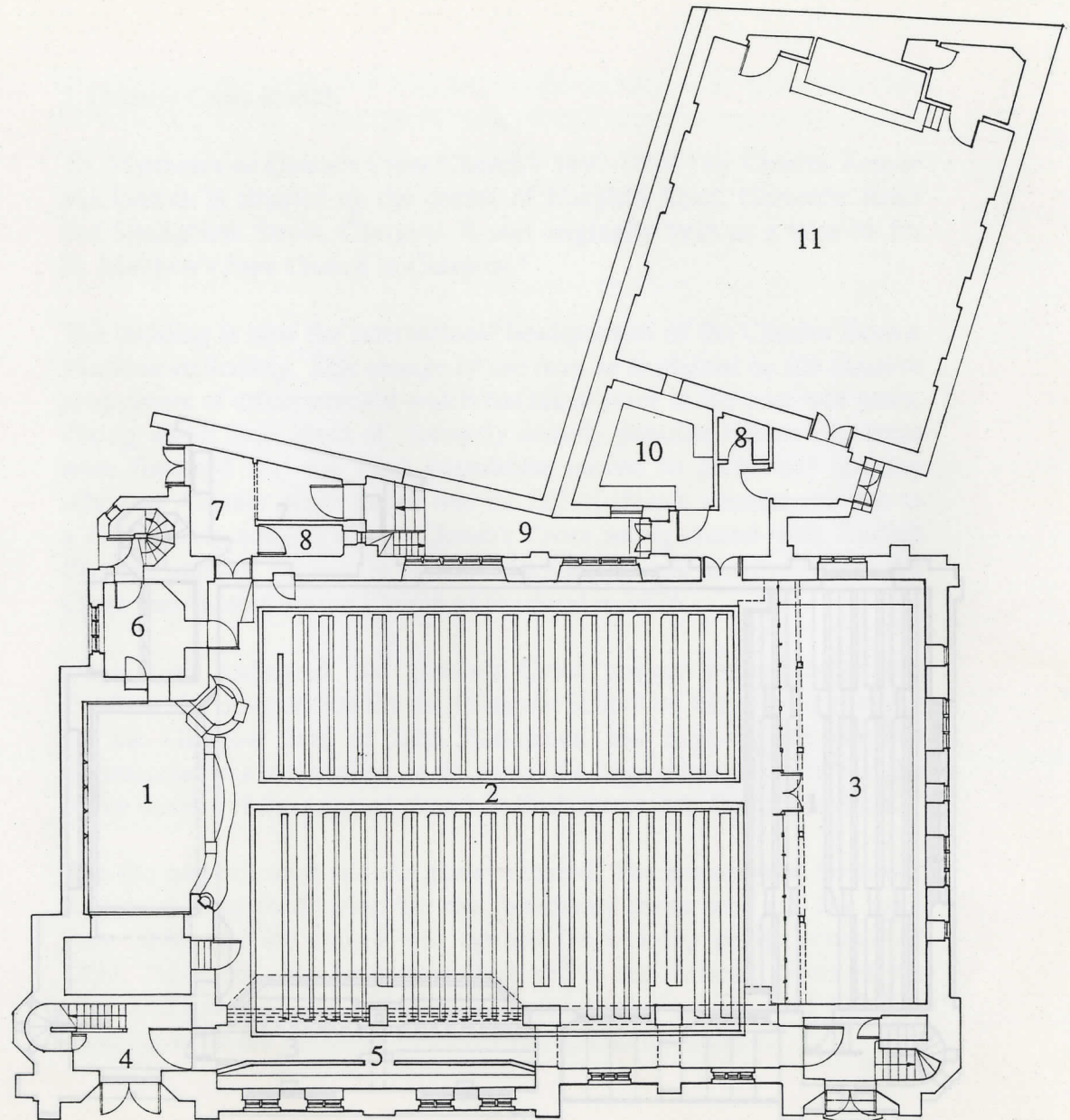
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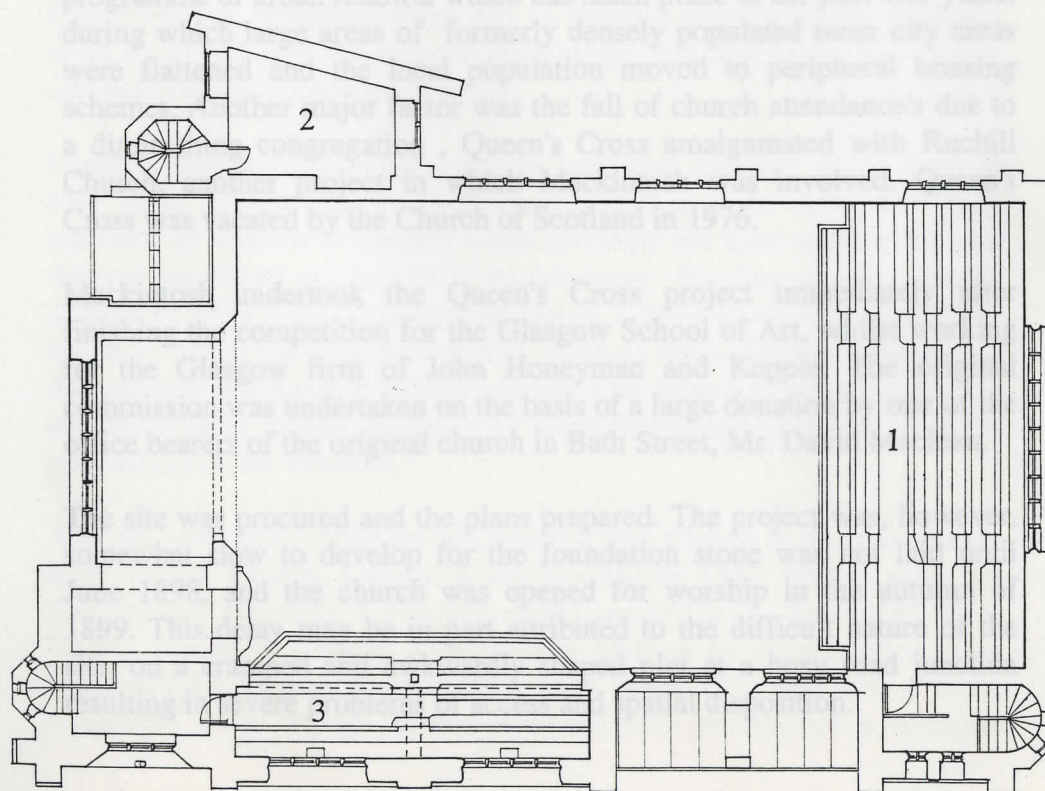
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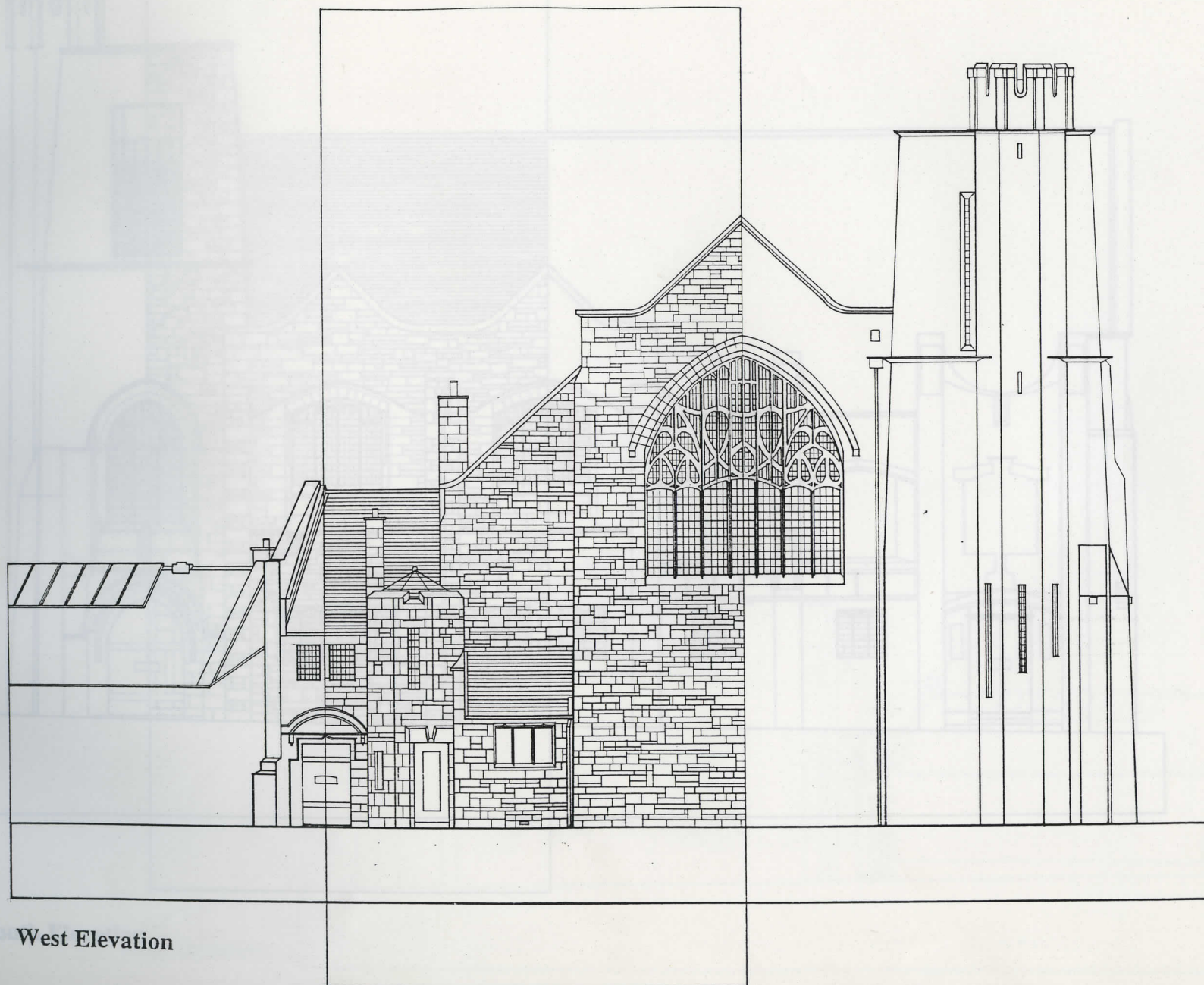
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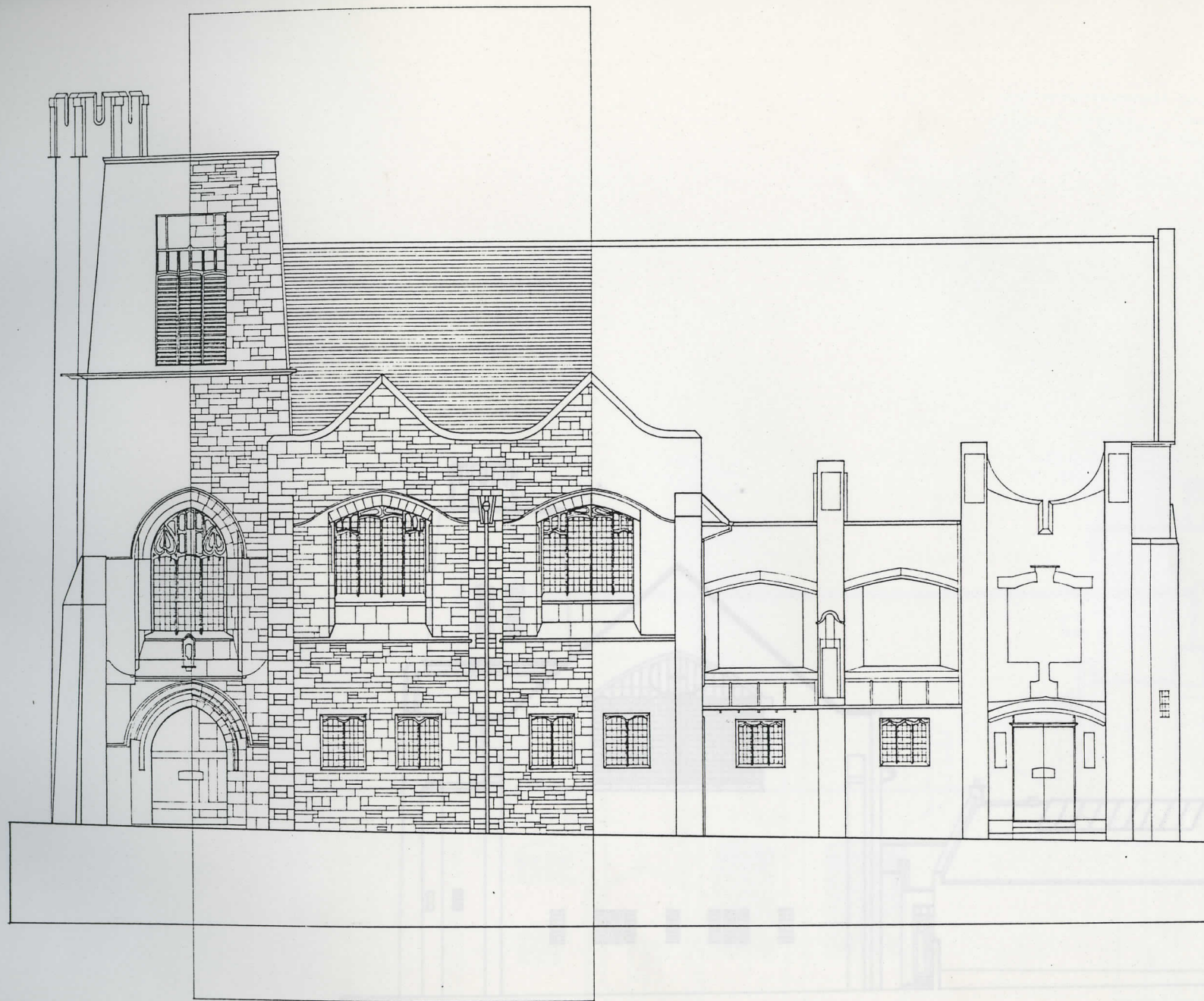
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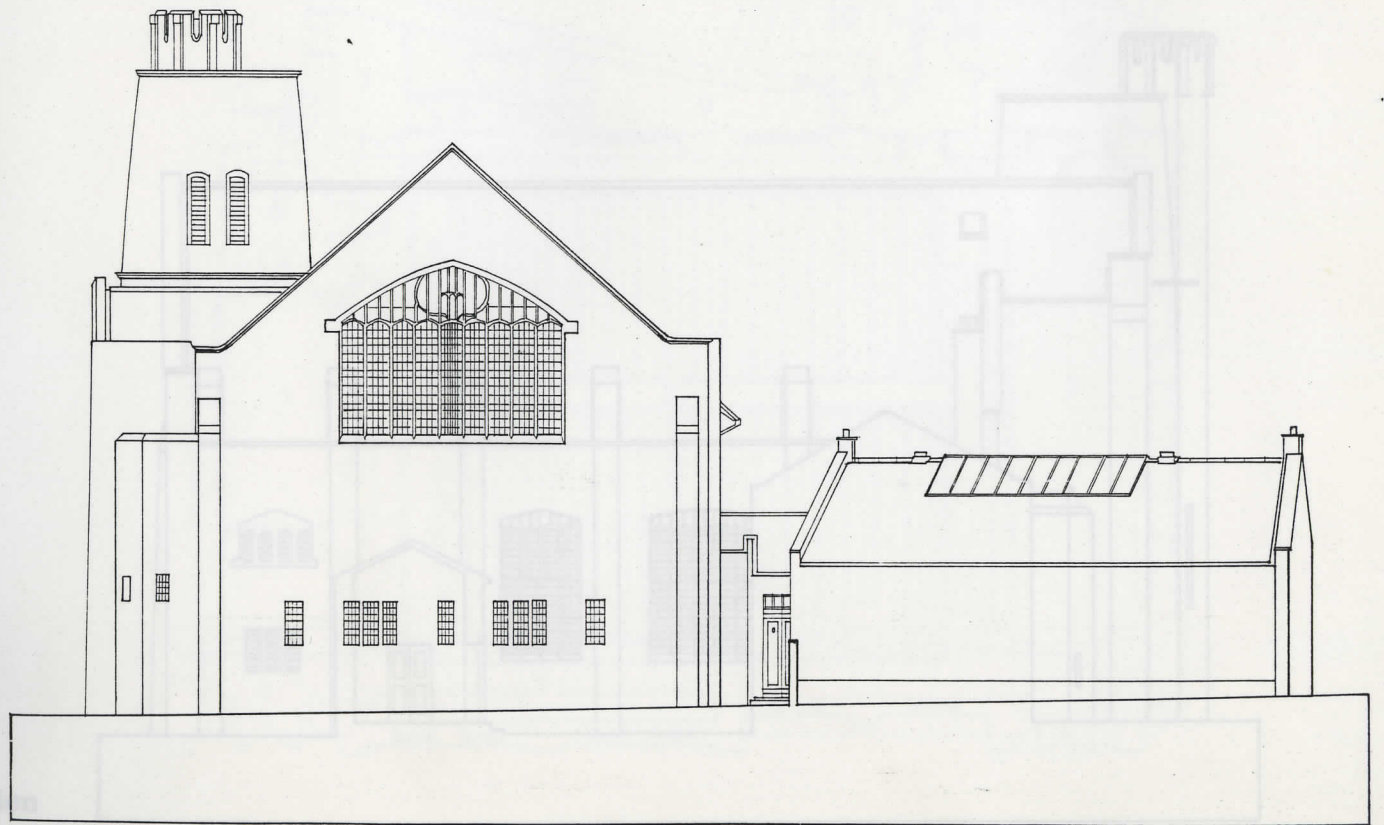




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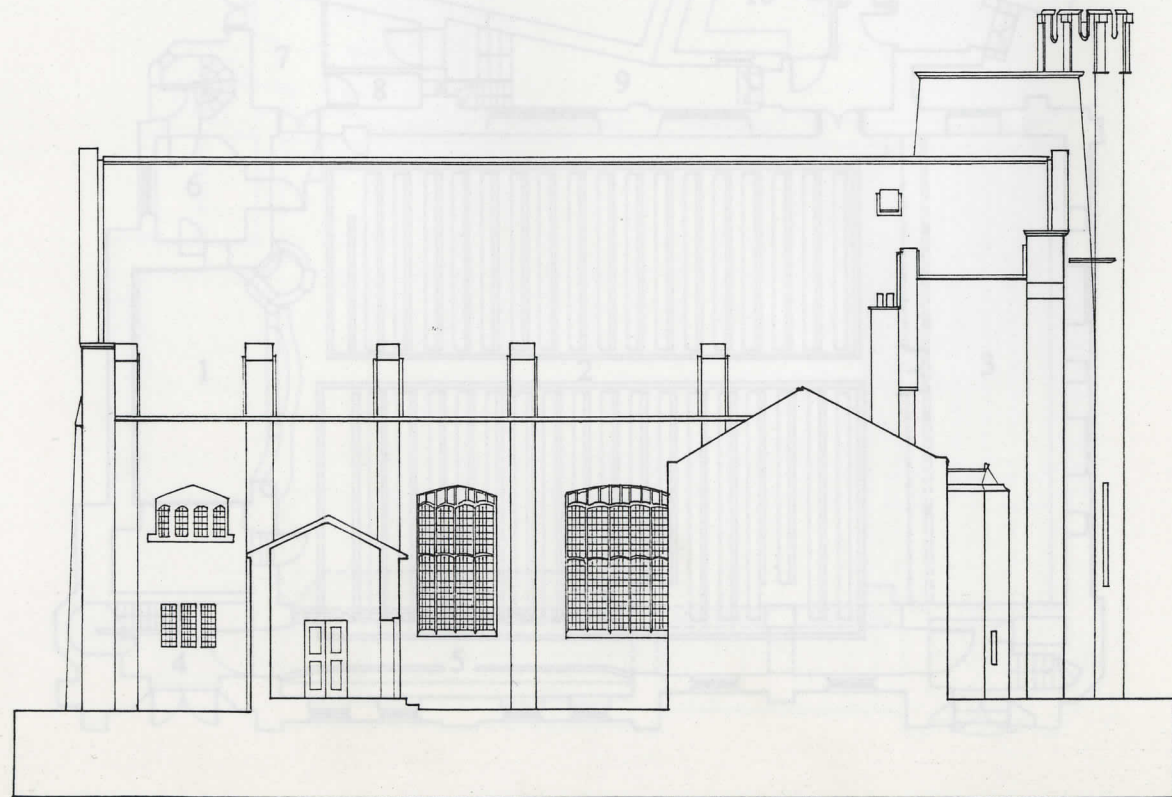
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East Elevation

Ground Floor Plan

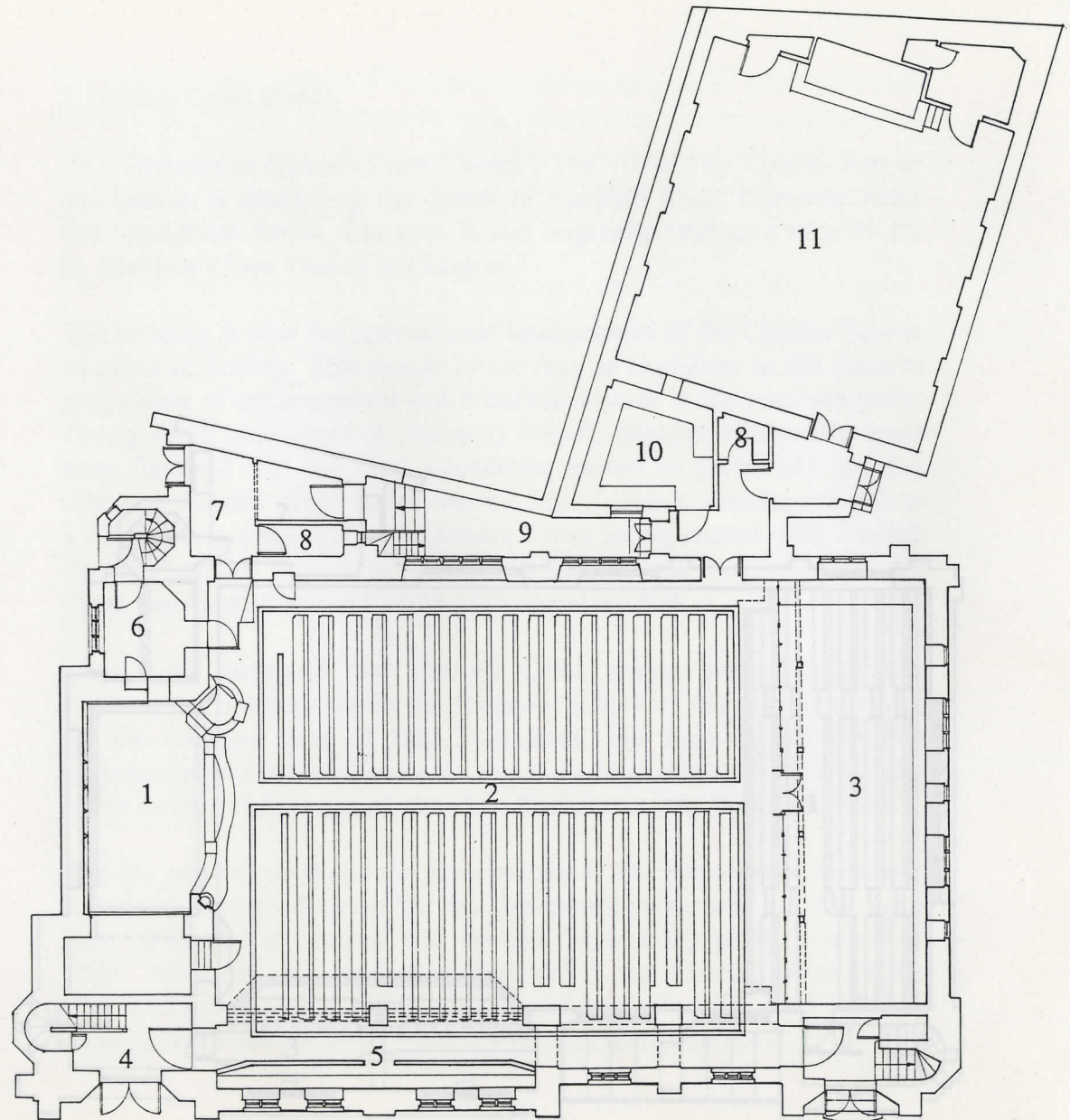
1. church
2. gate
3. gallery hall
4. vestibule
5. stairs
6. entrance hall
7. cloakroom
8. wc
9. yard
10. kitchen
11. church hall



North Elevation

Ground Floor Plan

- 1. chancel
- 2. nave
- 3. gallery hall
- 4. vestibule
- 5. aisle
- 6. entrance hall
- 7. cloakroom
- 8. wc
- 9. yard
- 10. kitchen
- 11. church hall



First Floor Plan

1. gallery
2. office
3. side gallery

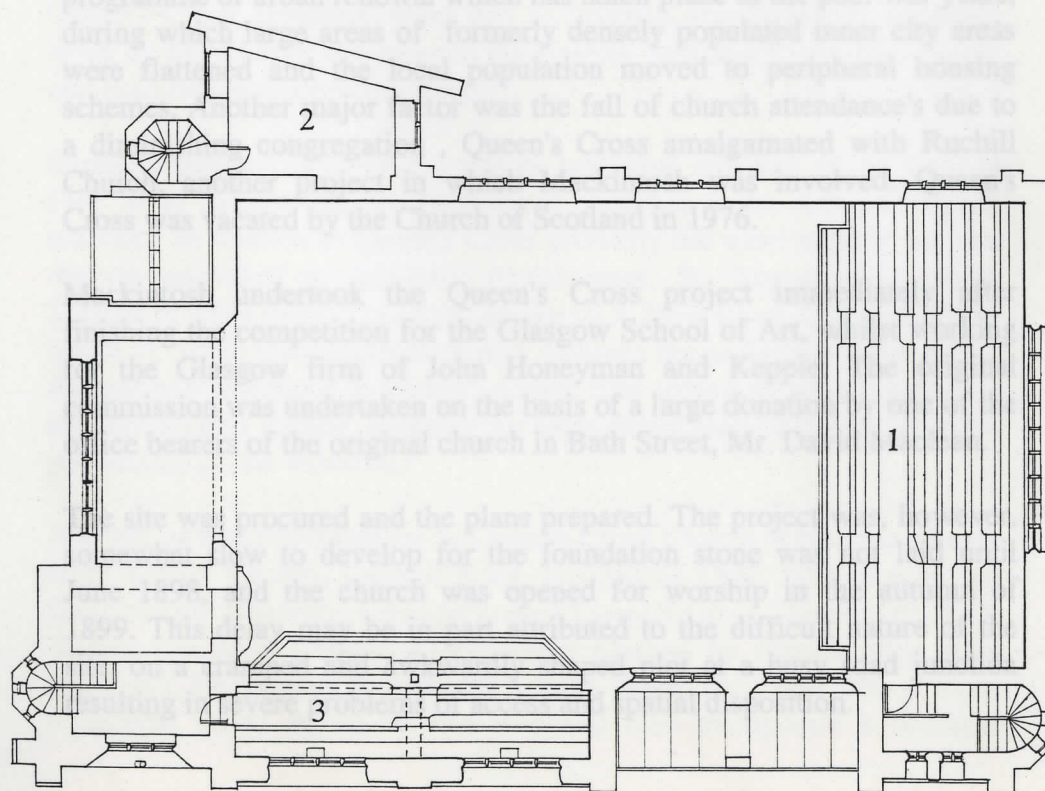
2. Queen's Cross church

St. Matthew's or Queen's Cross Church (1897-1899) by Charles Renie Mackintosh is situated on the corner of Maryhill Road, Garscube Road and Springbank Street, Glasgow. It was originally built as a mission for St. Matthew's Free Church in Glasgow.³

The building is now the international headquarters of the Charles Renie Mackintosh Society. This change of use may be explained by the massive programme of urban renewal which has taken place in the post-war years, during which the mass of formerly densely populated inner city areas were flattened and the population moved to peripheral housing schemes. Another major factor was the fall of church attendance due to a declining congregation. Queen's Cross amalgamated with Ruchill Church and was absorbed by the Church of Scotland in 1976.

Mackintosh undertook the Queen's Cross project in response to a competition for the Glasgow School of Art. The Glasgow firm of John Honeyman and Keppie was the successful submission and the mission was undertaken on the basis of a large donation of space bequeathed by the original church in Bath Street, Mr. David

The site was procured and the plans prepared. The project was approved by the Glasgow City Council and the foundation stone was laid in 1897. The church was opened for worship in 1899. This was a difficult time for the church and contributed to the difficulties of the



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Mackintosh undertook the Queen's Cross project immediately after finishing the competition for the Glasgow School of Art, whilst working for the Glasgow firm of John Honeyman and Keppie. The original commission was undertaken on the basis of a large donation by one of the office bearers of the original church in Bath Street, Mr. David Maclean.

The site was procured and the plans prepared. The project was, however, somewhat slow to develop for the foundation stone was not laid until June 1898, and the church was opened for worship in the autumn of 1899. This delay may be in part attributed to the difficult nature of the site, on a cramped and awkwardly shaped plot at a busy road junction resulting in severe problems of access and spatial disposition.

The original brief called not only for a galleried church to seat some 700 persons, but also for a separate linked hall with direct access to the street. Additional factors were the close proximity of a warehouse to the north (now demolished) and a four storey tenement block causing restricted light, especially on the east.

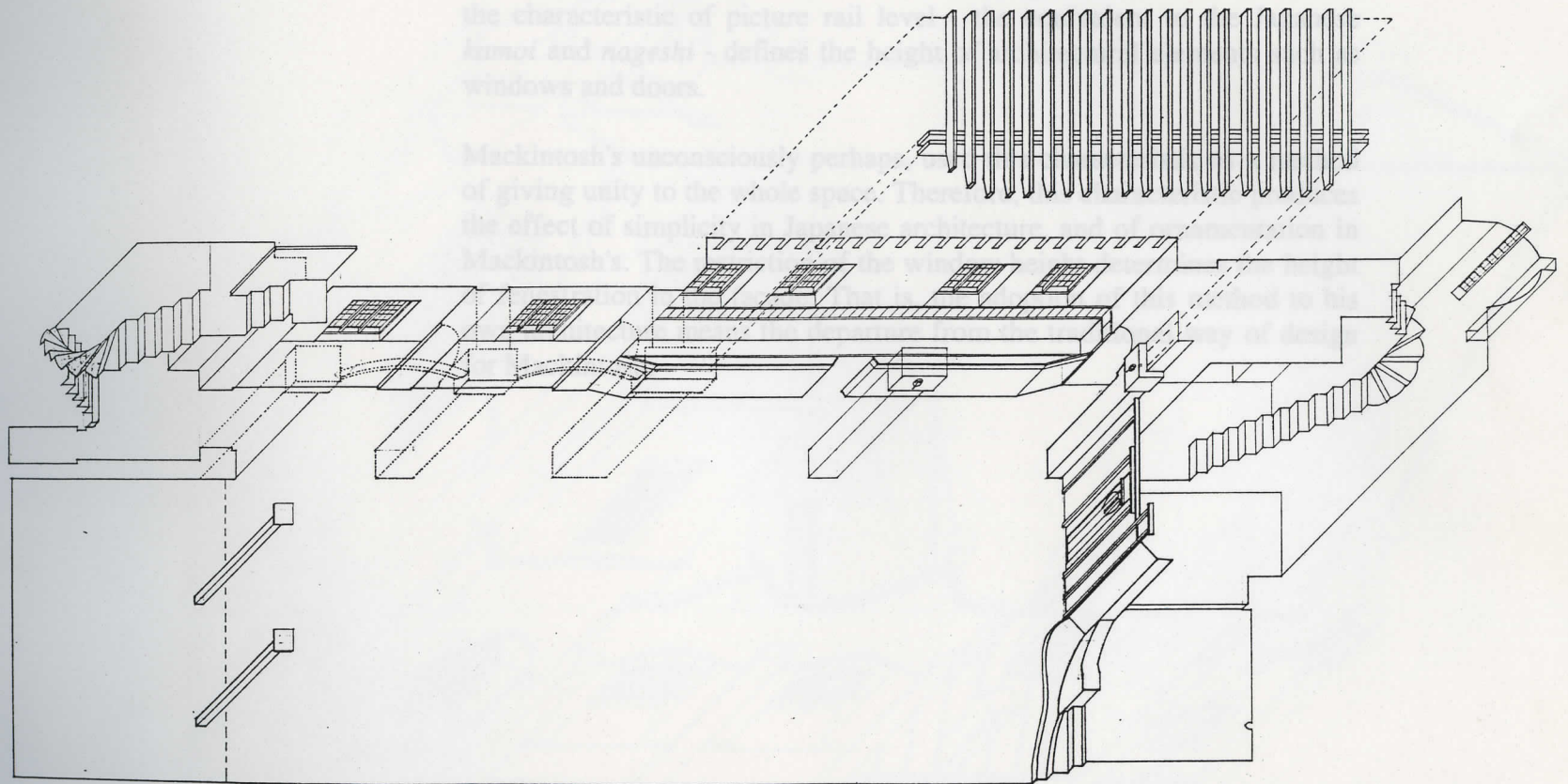
The initial impression is of a very traditional building. The building is ' Modern Gothic ' which is distinguished by relying neither on academic purism nor on eclecticism. It was based on the late Gothic Perpendicular Style which had only recently come into favour during that period. Queen's Cross, therefore, owes less to Scottish precedent than previous work by Mackintosh and more to the English Arts and Crafts Movement, and specifically to Leonard Stokes.⁴

Leonard Stokes (1858-1925) was an inventive architect of the English Free Style School. He designed many churches in an Arts and Crafts manner.⁵ In relation to Queen's Cross probably the most notable are two designs published in *Academy Architecture*, St. Augustine's Church, Suffolk of 1894 (plate 2) and the design of A New Town Church in 1893 (plate 3). There is a distinct similarity between the projecting eaves on St. Augustine's and those at Queen's Cross. The treatment of the gables is also remarkably similar, adopting the same shouldered treatment, as is the positioning of the windows.⁶

Another undeniable influence to Queen's Cross Church is Norman Shaw's Holy Trinity Church, Latimer Road, London of 1887, built exactly ten years before. However, a comparison of Queen's Cross Church with Holy Trinity (plate 4) shows Mackintosh's plan to be considerably more ingenious. He manage to combine a large single span roof with a more traditional aisled layout on one side and also incorporate a vestigial

It is possible that Mackintosh had read Edward Morse's book on the Japanese House where he might have adopted this analogy. This analogy between the Mackintosh's architecture and Japanese architecture lies in the characteristic of picture rail level. *Amori and nagashi* - defined the height of the windows and doors.

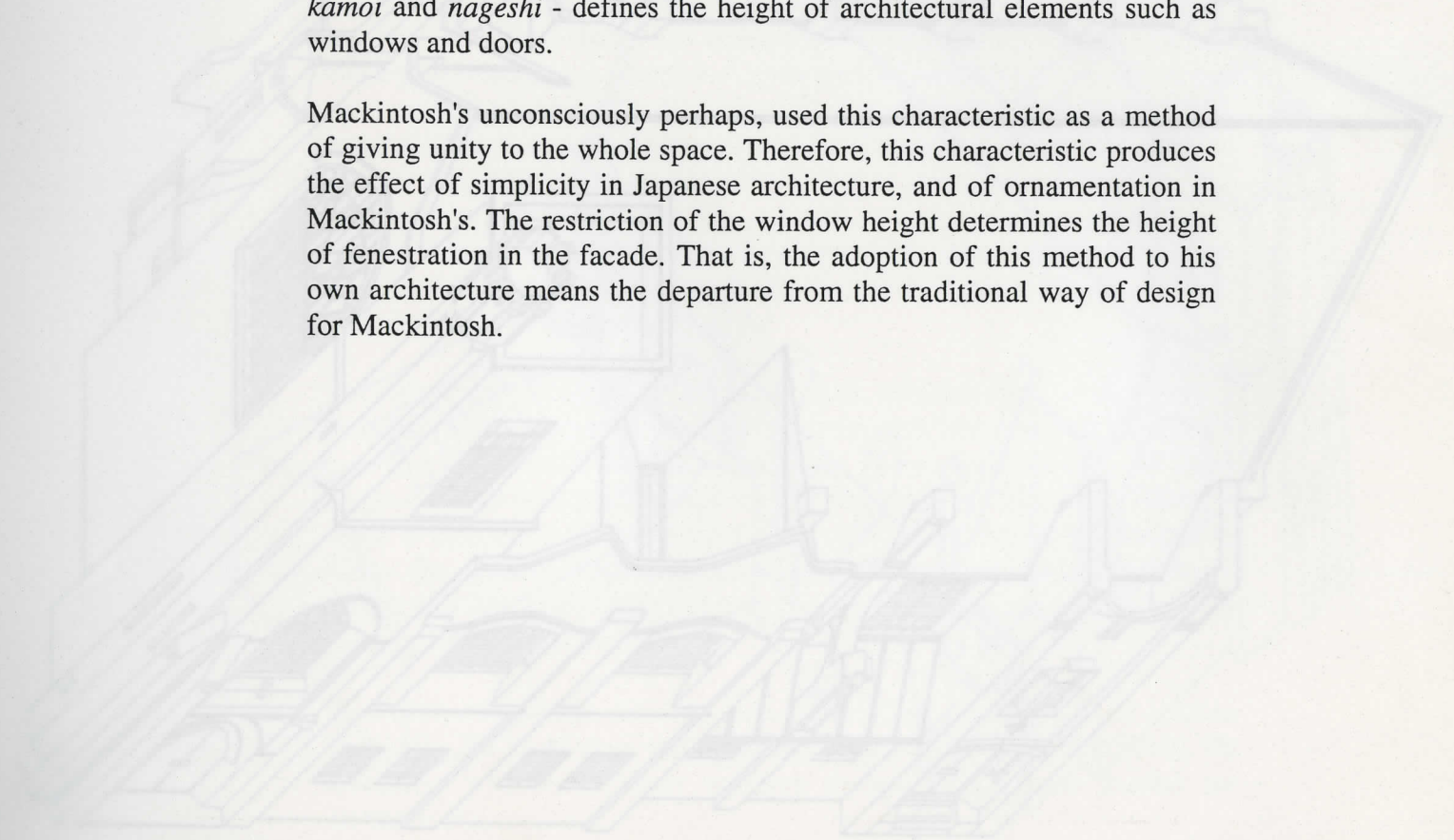
Mackintosh's unconsciously perhaps of giving unity to the whole space. There is the effect of simplicity and clarity in Mackintosh's The

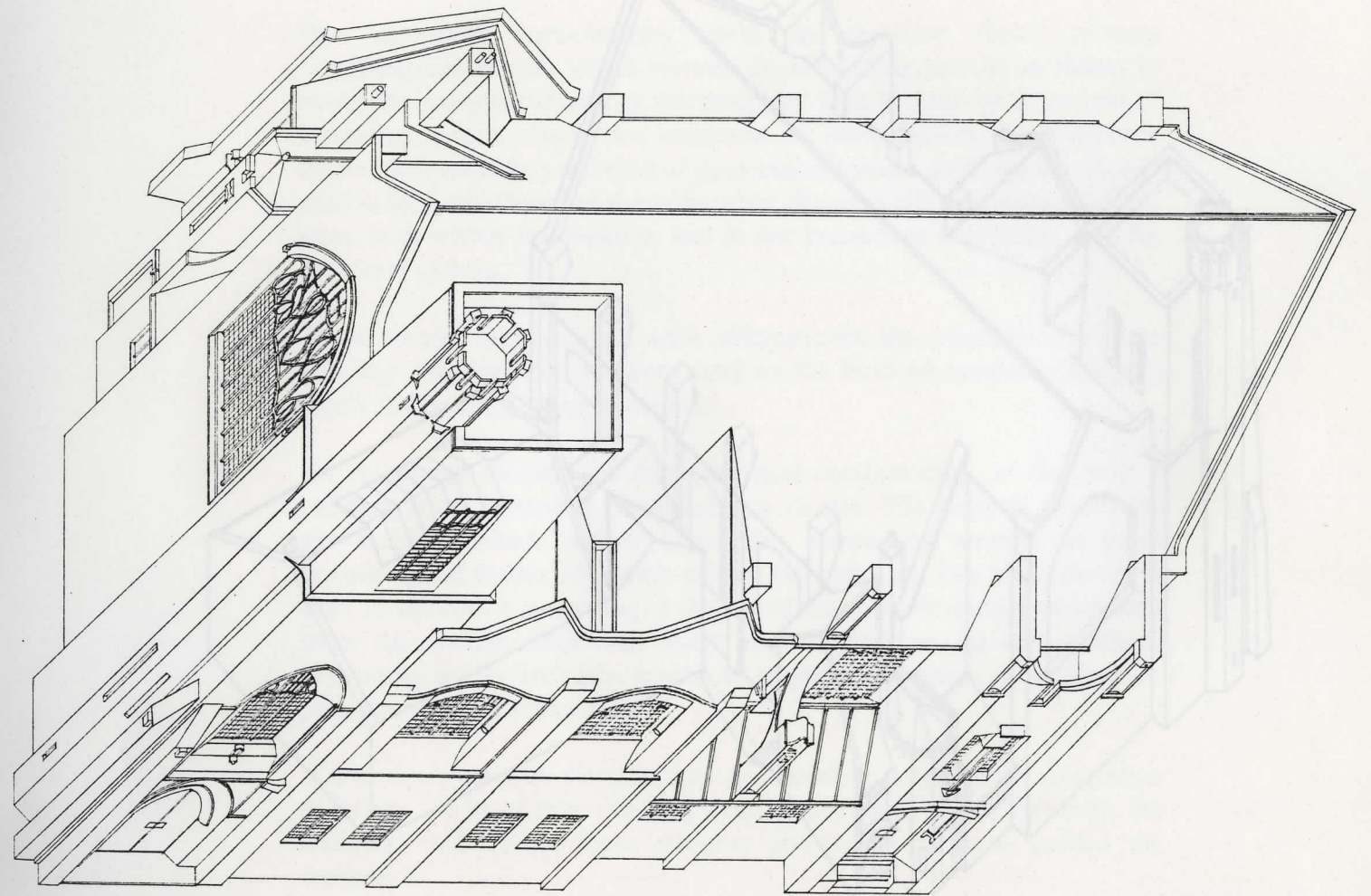


Interior South Facade

It is possible that Mackintosh had read Edward Morse's book on the Japanese House where he might have adopted this analogy. This analogy between the Mackintosh's architecture and Japanese architecture lies in the characteristic of picture rail level - the equivalent to the Japanese *kamoi* and *nageshi* - defines the height of architectural elements such as windows and doors.

Mackintosh's unconsciously perhaps, used this characteristic as a method of giving unity to the whole space. Therefore, this characteristic produces the effect of simplicity in Japanese architecture, and of ornamentation in Mackintosh's. The restriction of the window height determines the height of fenestration in the facade. That is, the adoption of this method to his own architecture means the departure from the traditional way of design for Mackintosh.





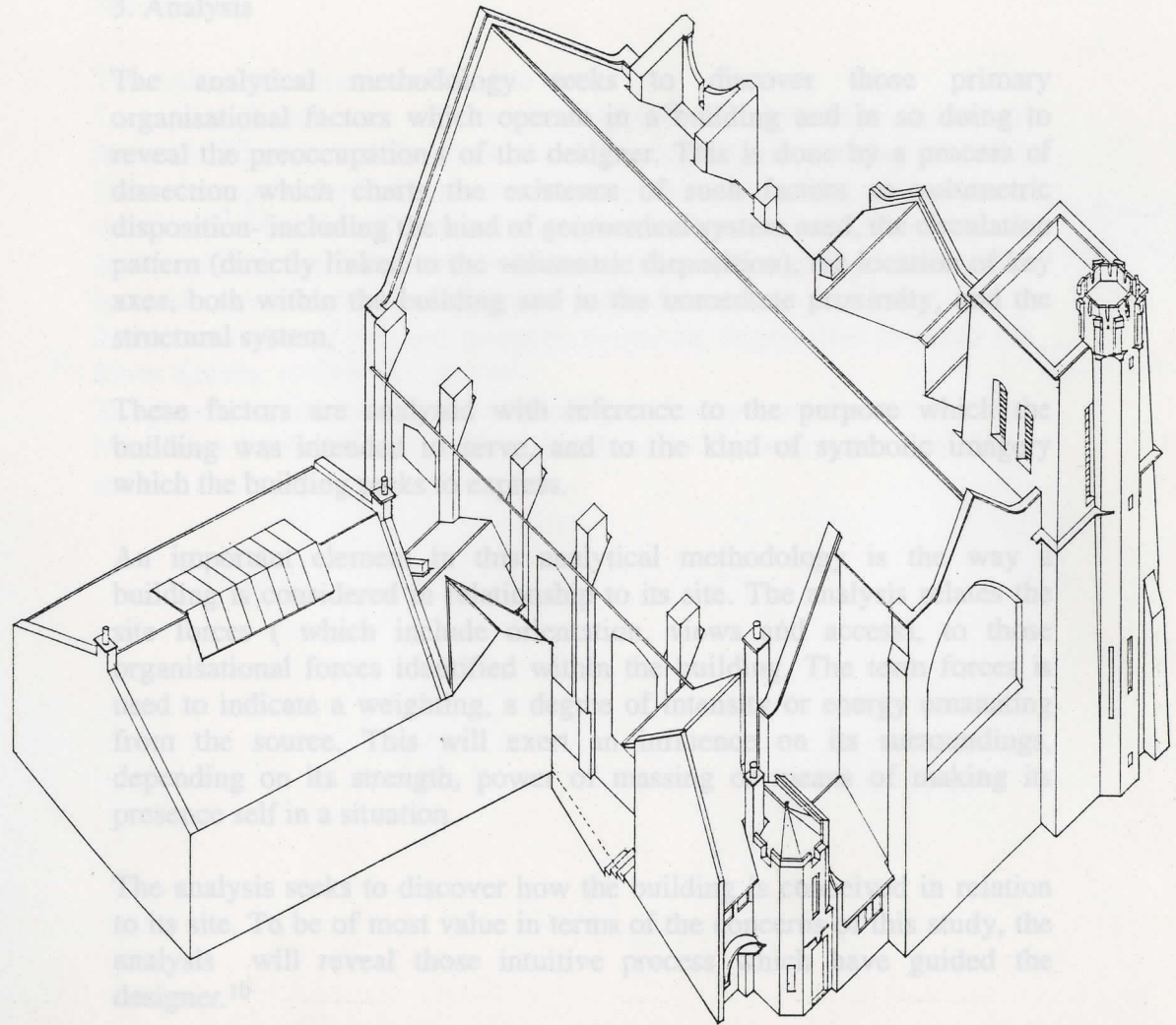
3. Analysis

The analytical methodology involves three primary organizational factors which operate in a building and in so doing to reveal the preoccupations of the designer. The first is a process of dissection which shows the external form of the building, its disposition, including the kind of generated structure, the pattern (directly linked to the volumetric disposition of the axes, both within the building and in the external structural system.

These factors are then used with reference to the purpose of the building was intended to be used to the kind of structure which the building was intended to be used for.

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The analysis seeks to discover how the building is in relation to the site, to be of most value in terms of the building, the analysis will reveal these intuitive preoccupations of the designer.



3. Analysis

The analytical methodology seeks to discover those primary organisational factors which operate in a building and in so doing to reveal the preoccupation's of the designer. This is done by a process of dissection which charts the existence of such factors as volumetric disposition- including the kind of geometrical system used, the circulation pattern (directly linked to the volumetric disposition), the location of key axes, both within the building and in the immediate proximity, and the structural system.

These factors are analysed with reference to the purpose which the building was intended to serve, and to the kind of symbolic imagery which the building seeks to express.

An important element in this analytical methodology is the way a building is considered in relationship to its site. The analysis relates the site forces (which include orientation, views and access), to those organisational forces identified within the building. The term forces is used to indicate a weighting, a degree of intensity or energy emanating from the source. This will exert an influence on its surroundings, depending on its strength, power of massing or means of making its presence self in a situation.

The analysis seeks to discover how the building is conceived in relation to its site. To be of most value in terms of the concerns of this study, the analysis will reveal those intuitive process which have guided the designer.¹⁰

Site Forces

The main characteristics of the site are:

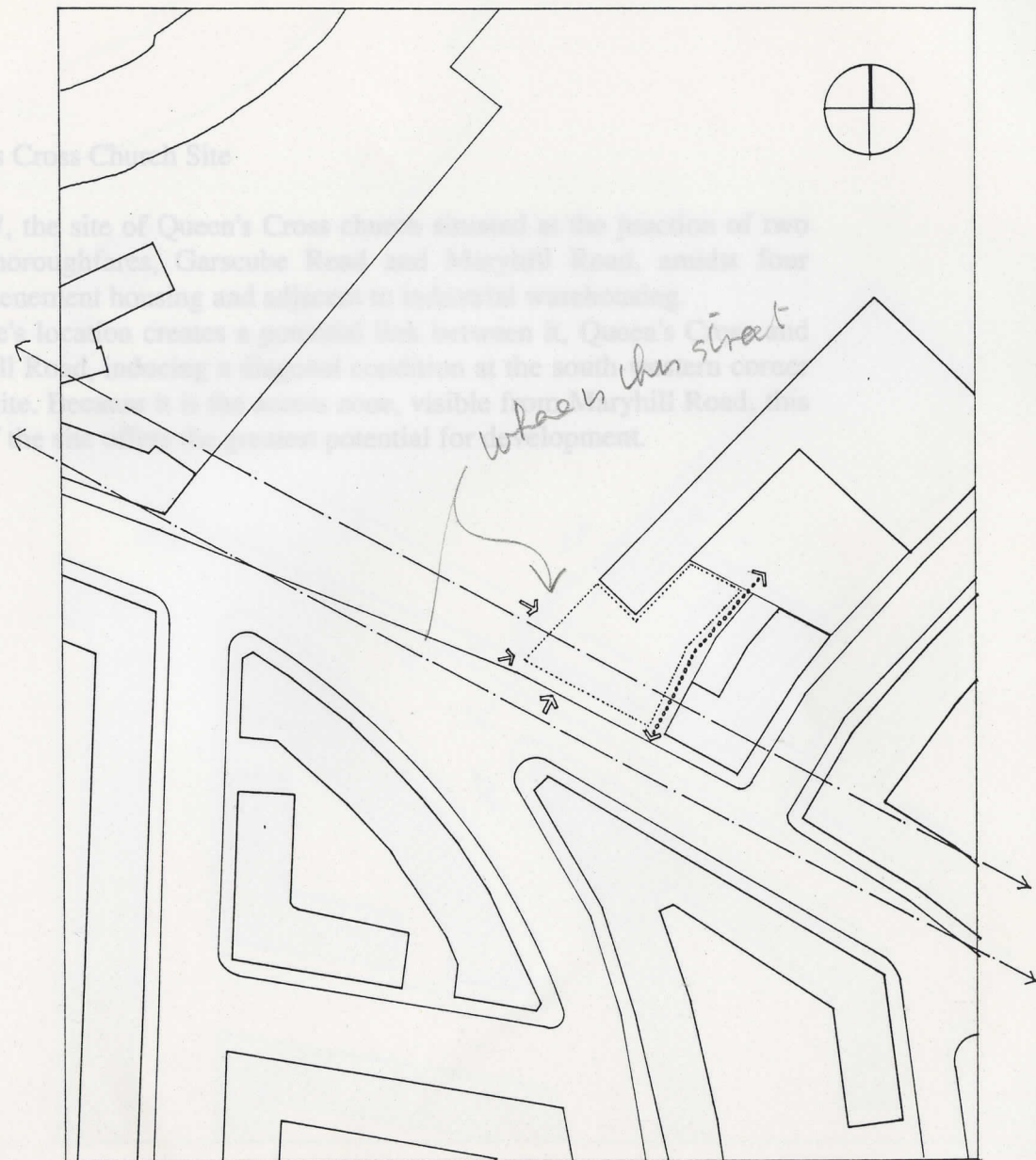
1. a main lateral axis echeloned alongside the rhythmical layout of tenement housing and Garscube Road. (According to the map of 1897, there show no record of tenement housing on the east. Therefore, I have considered Mackintosh's famous perspective drawing of Queen's Cross and I noticed that he conceptualised the tenement housing in almost a romantic ways with relationship to the church).
- X 2. the west side of the site pointing across an empty field towards the River Kelvin. *rough sketch canal*
3. a possible route through the east side provided potential connection the busy from Southeast end of Garscube Road to the deep north end of the site.

*I drew his
Mackintosh to the*

*the is seriously
slanted*

Queen's Cross Church Site

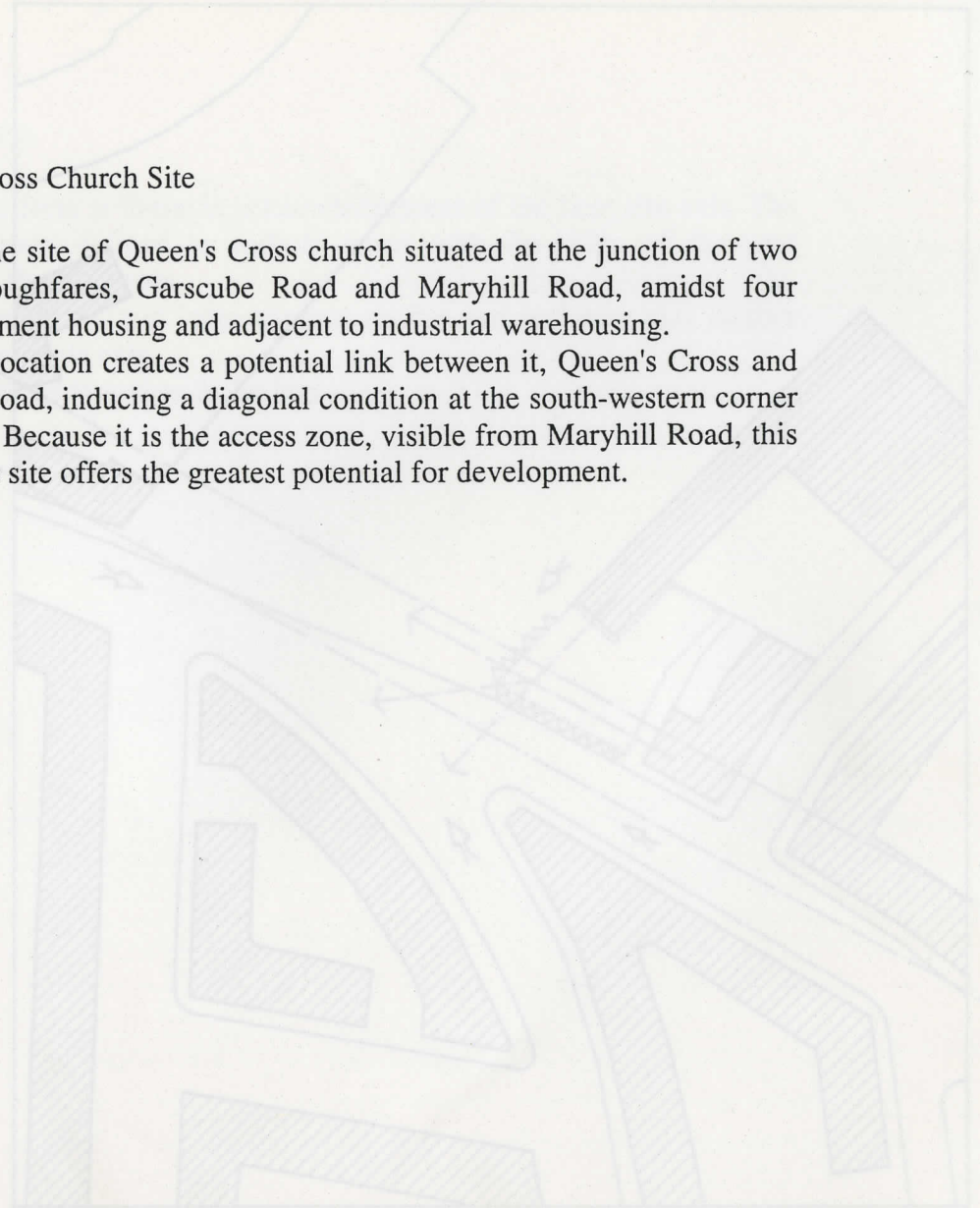
In 1897, the site of Queen's Cross church, situated at the junction of two busy thoroughfares, Glasgow Road and Maryhill Road, was a four storey tenement housing and adjacent an industrial warehouse. The site's location creates a potential link between St. Queen's and Maryhill, enhancing a historical connection at the heart of the corner of the site. It is a prime location, visible from Maryhill Road, the edge of the site, and has great potential for development.



Queen's Cross Church Site

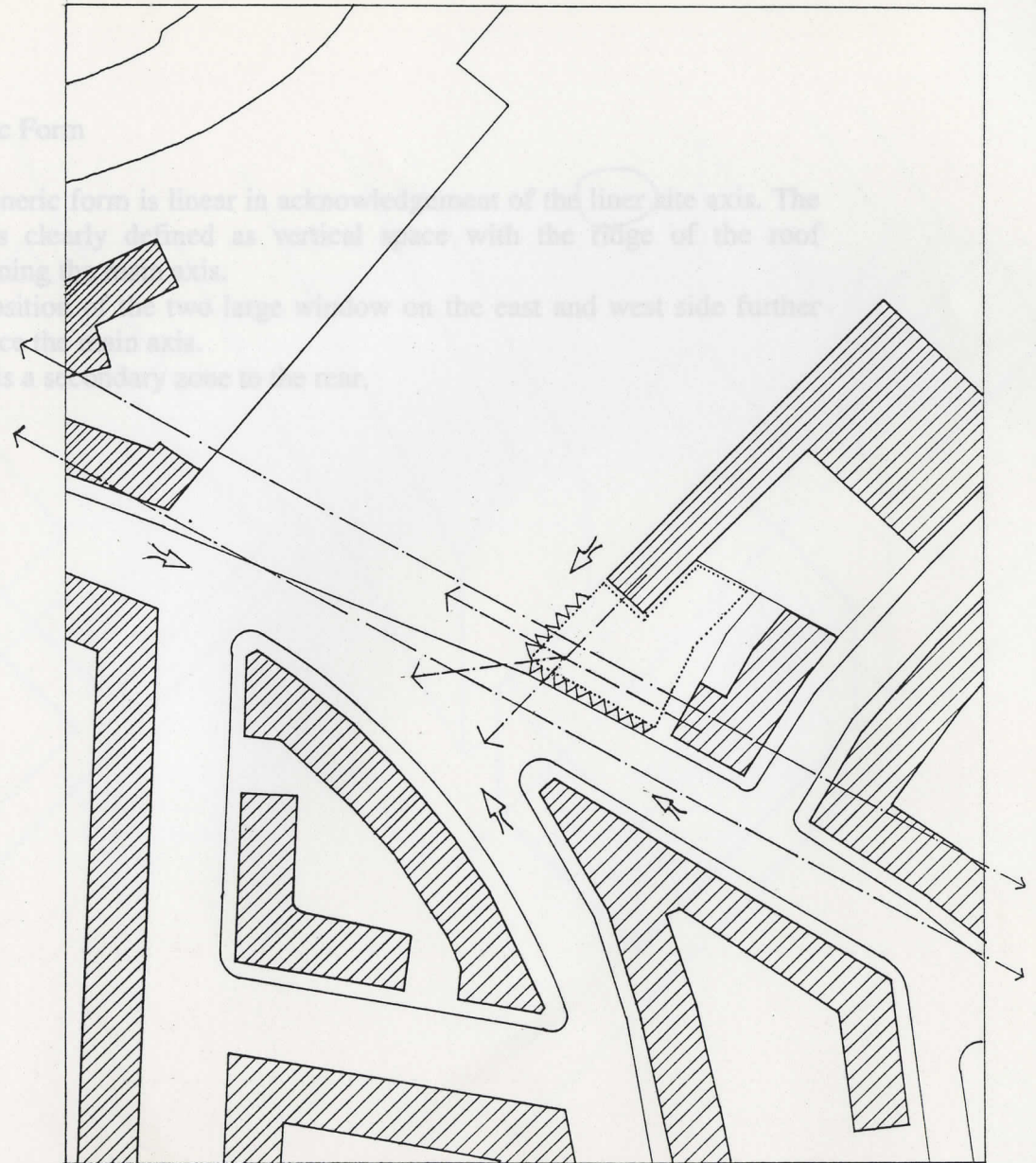
In 1897, the site of Queen's Cross church situated at the junction of two busy thoroughfares, Garscube Road and Maryhill Road, amidst four storey tenement housing and adjacent to industrial warehousing.

The site's location creates a potential link between it, Queen's Cross and Maryhill Road, inducing a diagonal condition at the south-western corner of the site. Because it is the access zone, visible from Maryhill Road, this edge of the site offers the greatest potential for development.



Generic Form

The generic form is linear in acknowledgment of the linear site axis. The nave is closely defined as vertical space with the ridge of the roof confirming the axis. The position of two large windows on the east and west side further reinforces the axis. There is a secondary space to the rear,

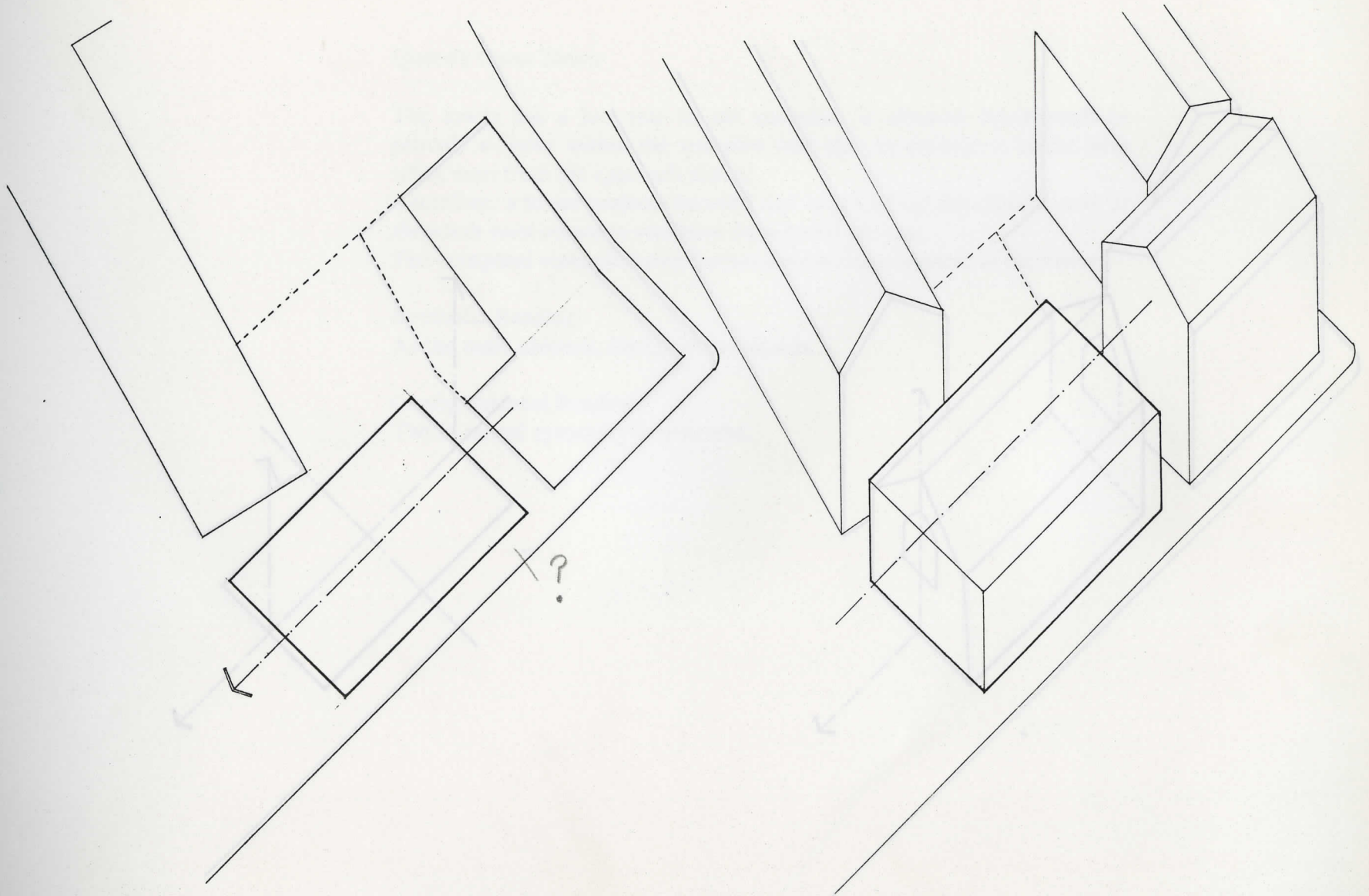


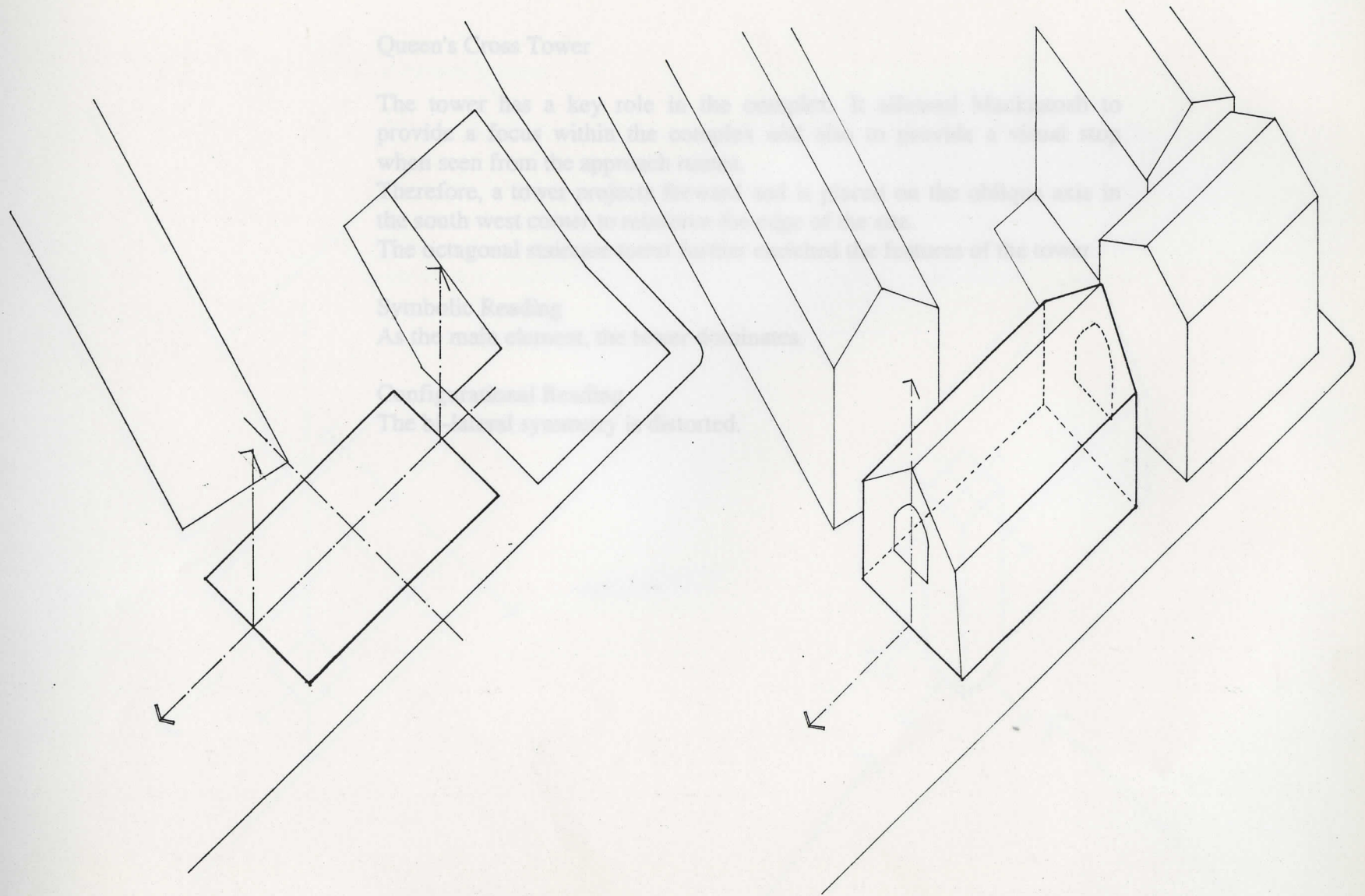
Generic Form

The generic form is linear in acknowledgement of the liner site axis. The nave is clearly defined as vertical space with the ridge of the roof confirming the main axis.

The position of the two large window on the east and west side further reinforce the main axis.

There is a secondary zone to the rear.





Queen's Cross Tower

The tower has a key role in the complex. It allowed Mackintosh to provide a focus within the complex and also to provide a visual stop when seen from the approach routes.

Therefore, a tower projects forward and is placed on the oblique axis in the south west corner to reinforce the edge of the site.

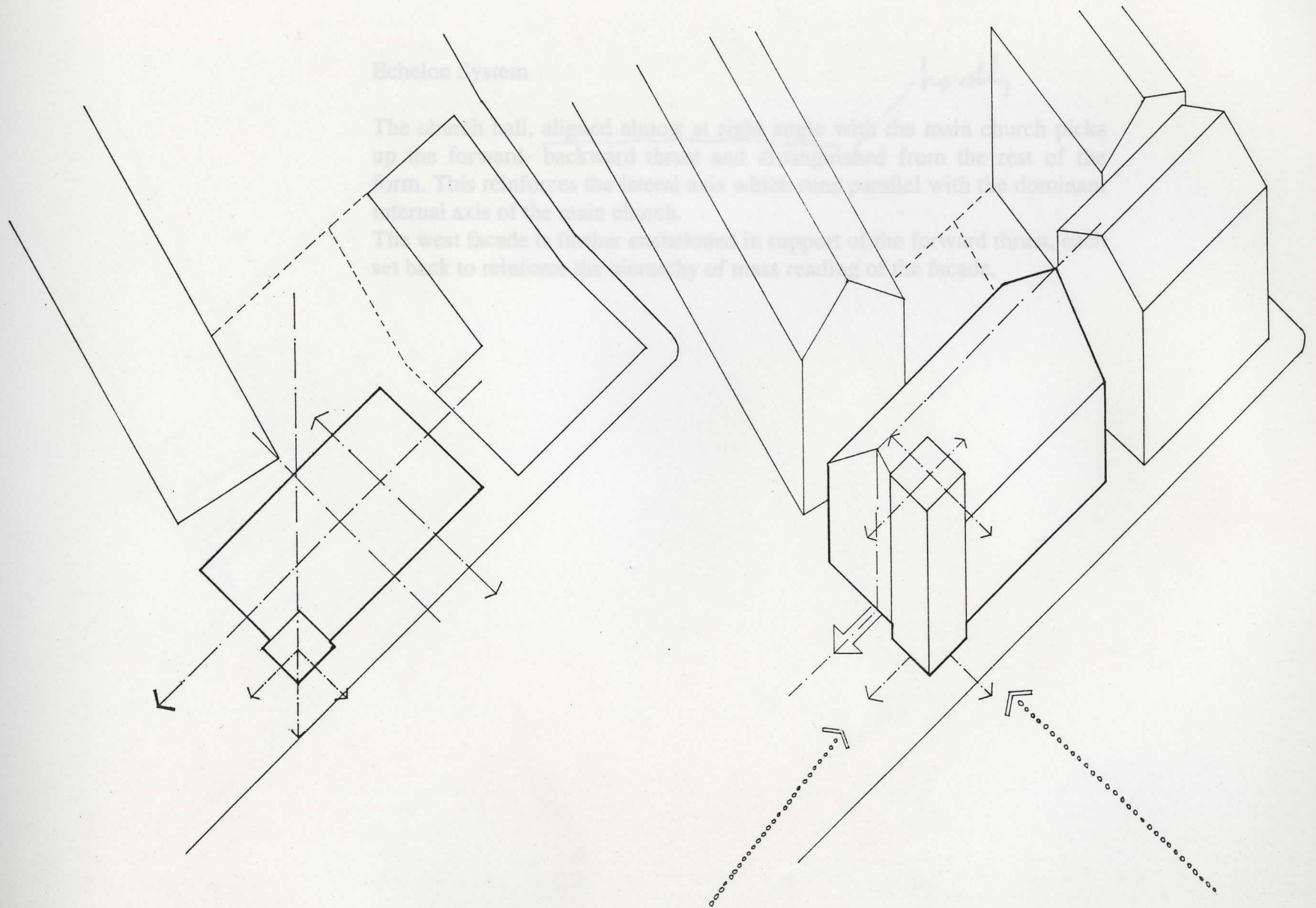
The octagonal staircase turret further enriched the features of the tower.

Symbolic Reading

As the main element, the tower dominates.

Configurational Reading

The bi-lateral symmetry is distorted.



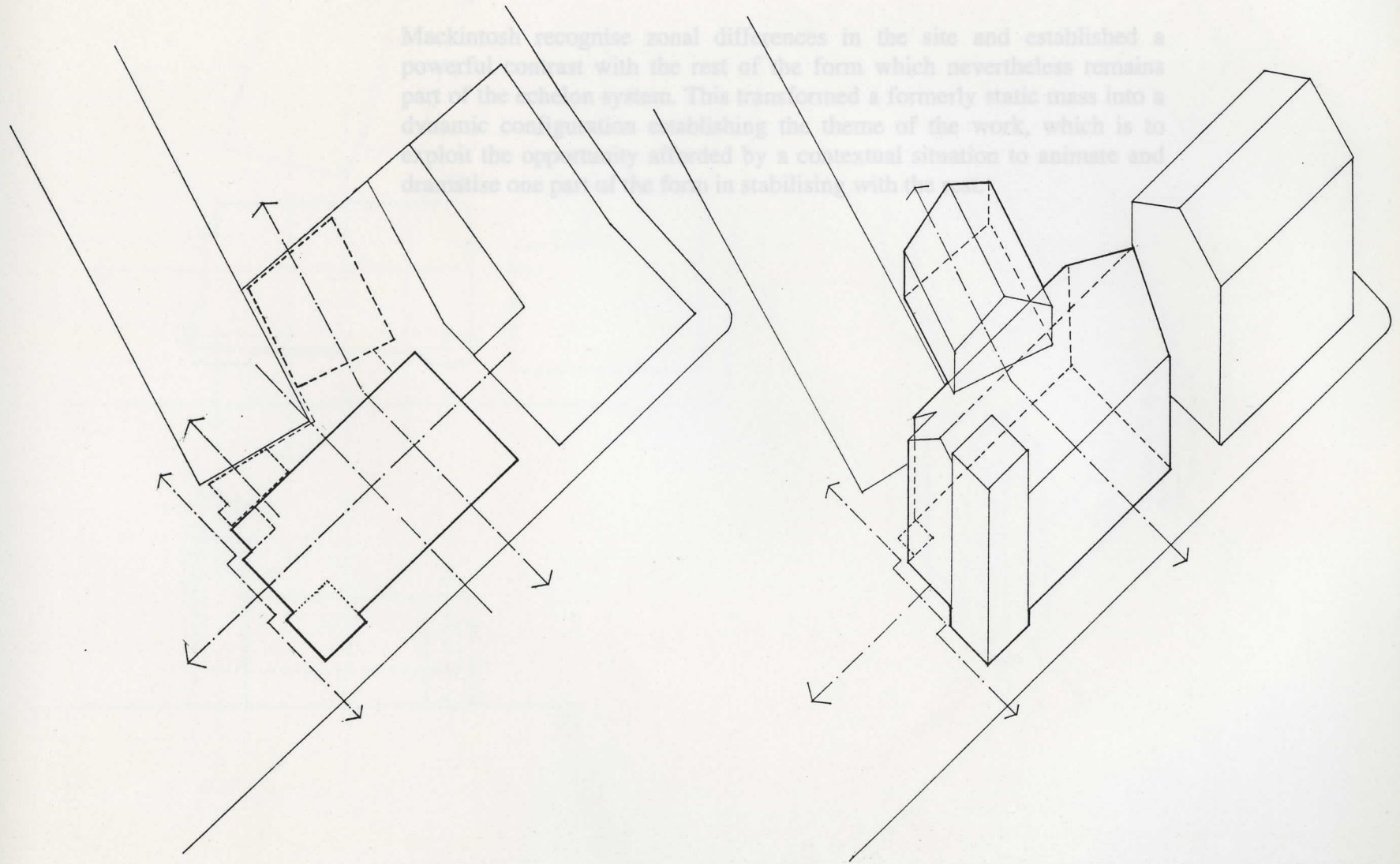
Echelon System

The church hall, aligned almost at right angle with the main church picks up the forward- backward thrust and distinguished from the rest of the form. This reinforces the lateral axis which runs parallel with the dominant internal axis of the main church.

The west facade is further encheloned in support of the forward thrust, each set back to reinforce the hierarchy of mass reading of the facade.

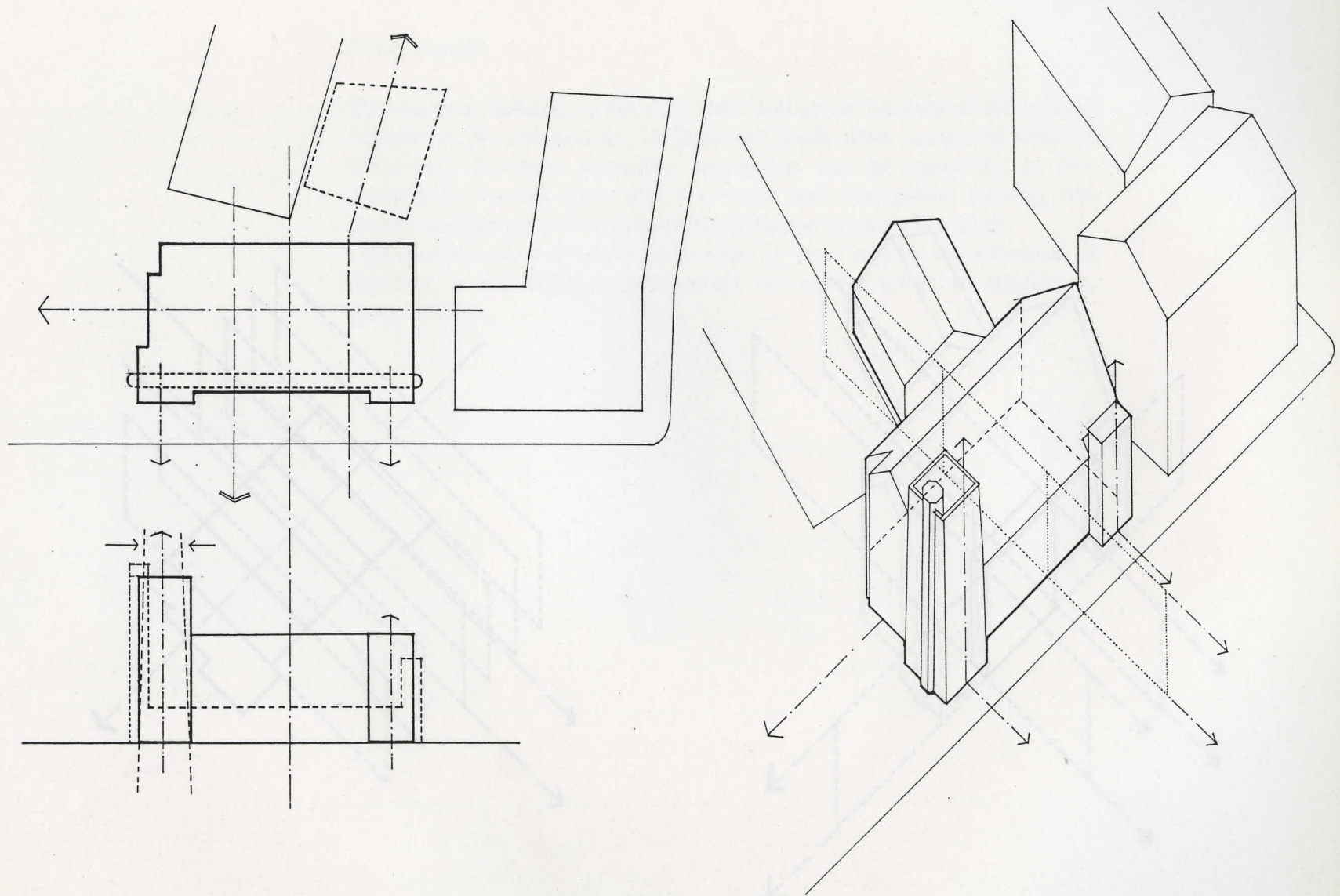
Theme

Mackintosh recognises zonal differences in the site and established a powerful contrast with the rest of the form which nevertheless remains part of the whole system. This transformed a formerly static mass into a dynamic composition establishing the theme of the work, which is to exploit the opportunity afforded by a contextual situation to animate and dramatise one part of the form in stabilising with the



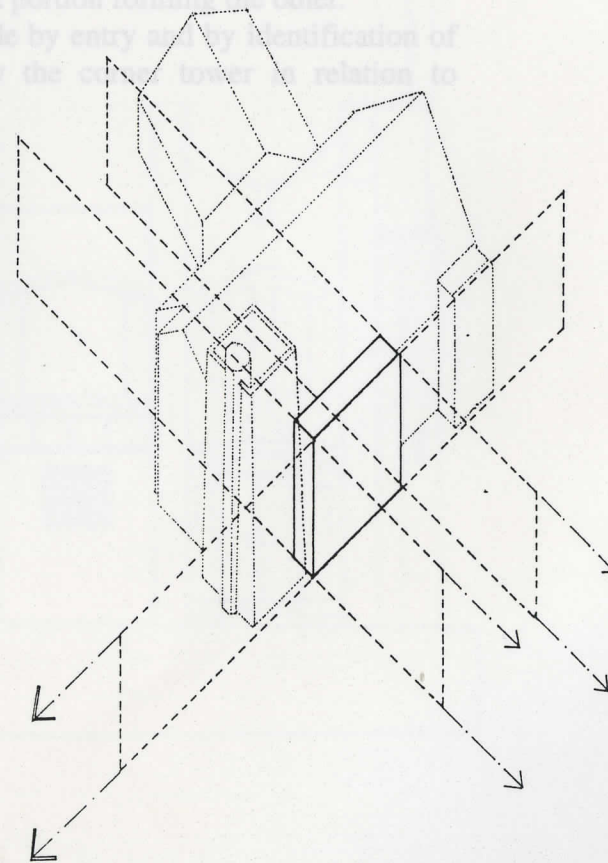
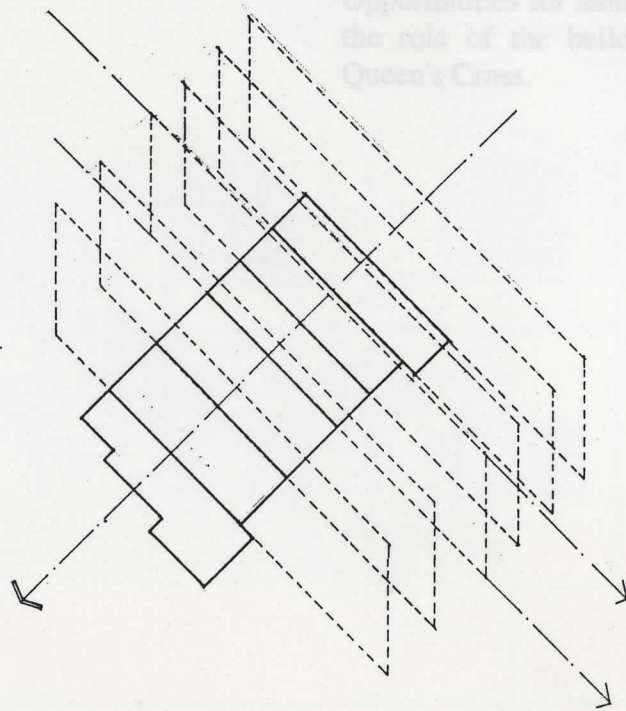
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South Facade

Dynamism is induced by the axial shift, and by the contrast of the vertical linearity of the south facade to Caracas Road, when compared with the horizontal, rhythmic plane-like remainder; can be conceived in two completely separate parts with the tower and twin gables forming one section and the secondary and recessed portion forming the other. Opportunities for animation are provided by entry and by identification of the role of the building, particularly the one tower in relation to Queen's Cross.

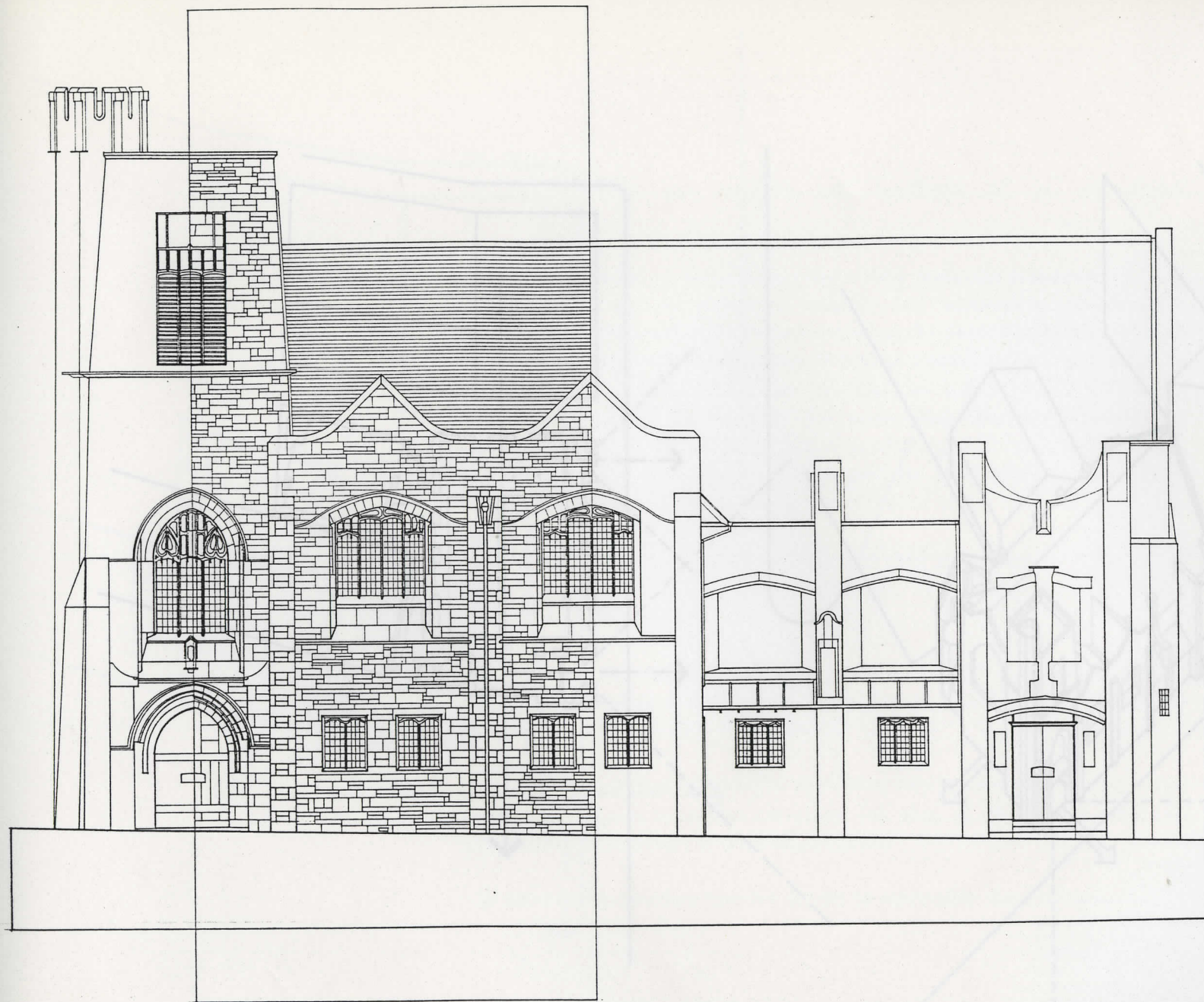


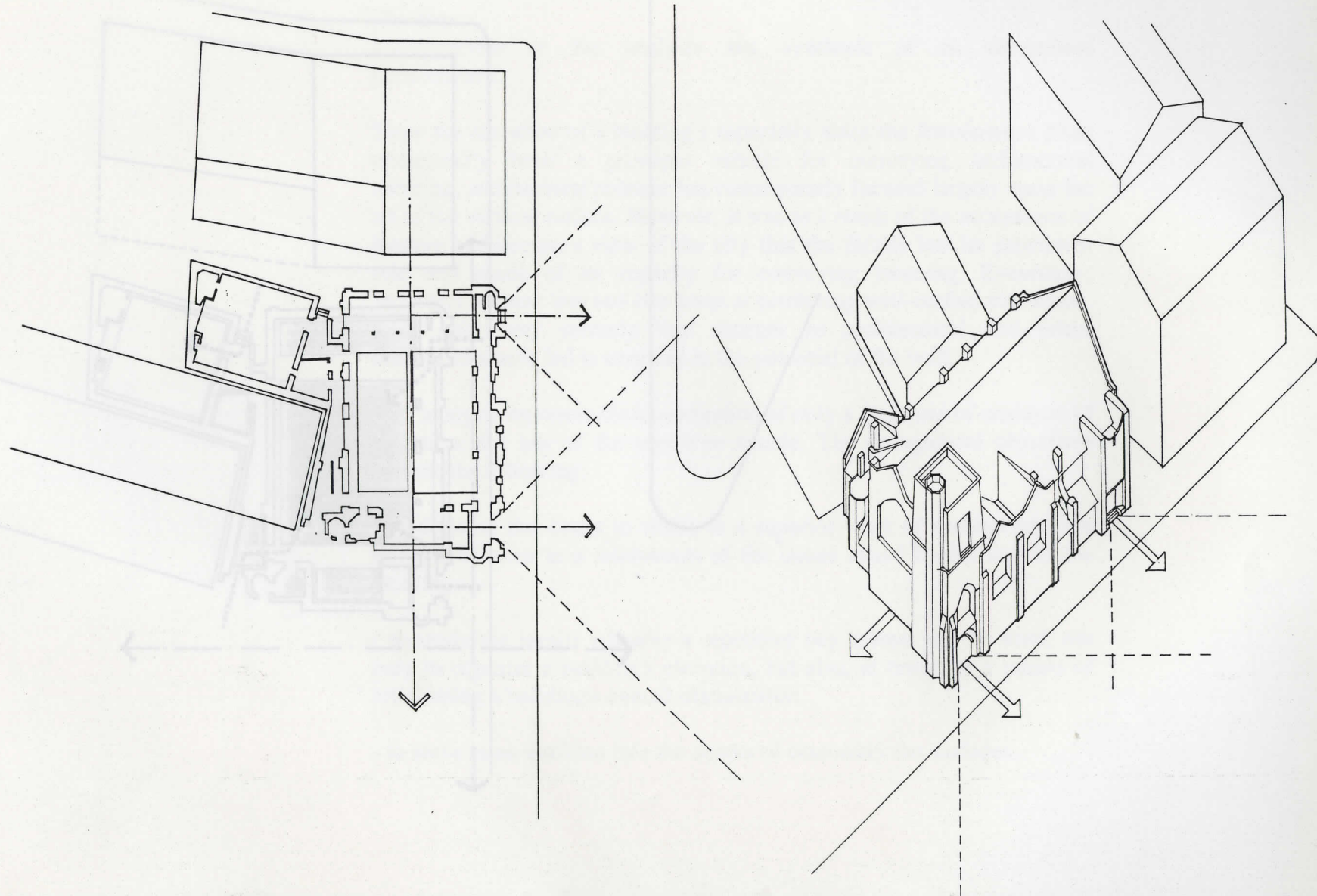


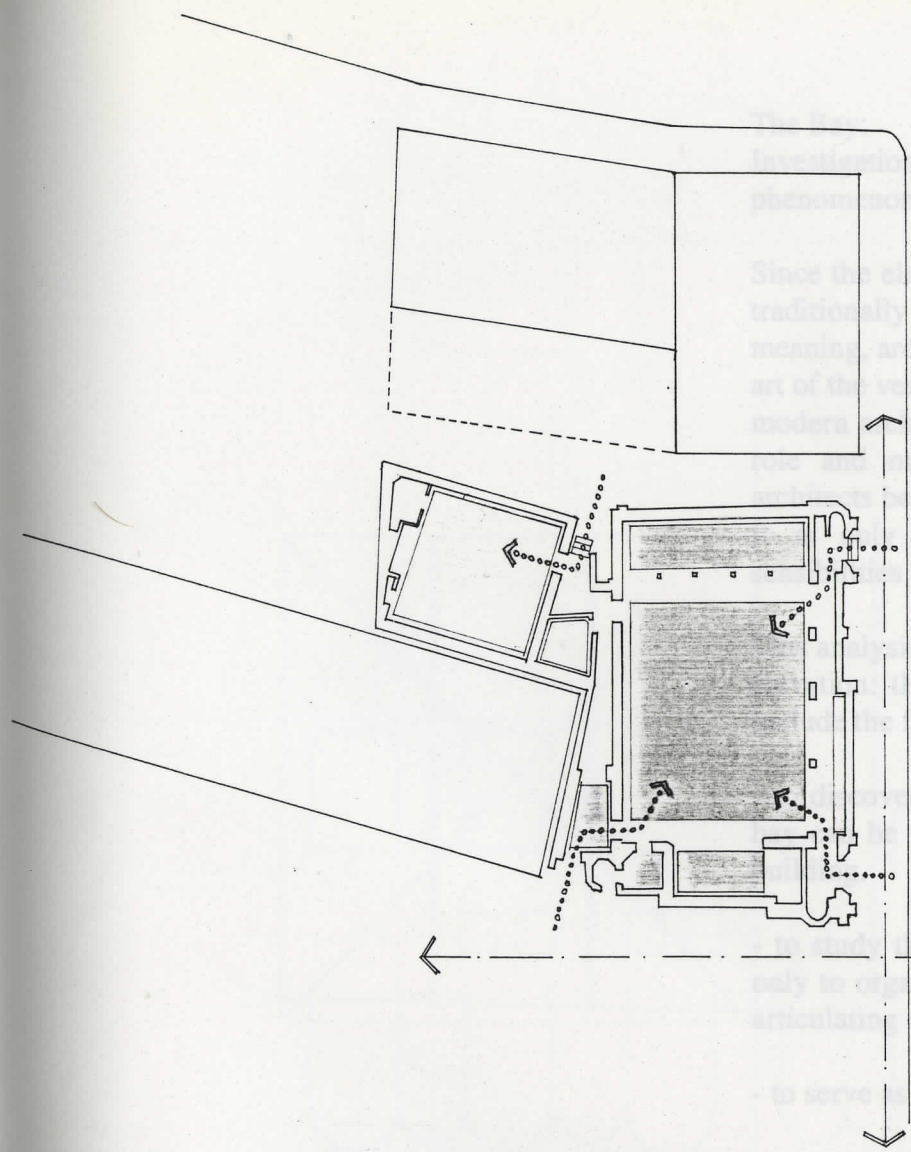
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Opportunities for animation are provided by entry and by identification of the role of the building, particularly the corner tower in relation to Queen's Cross.







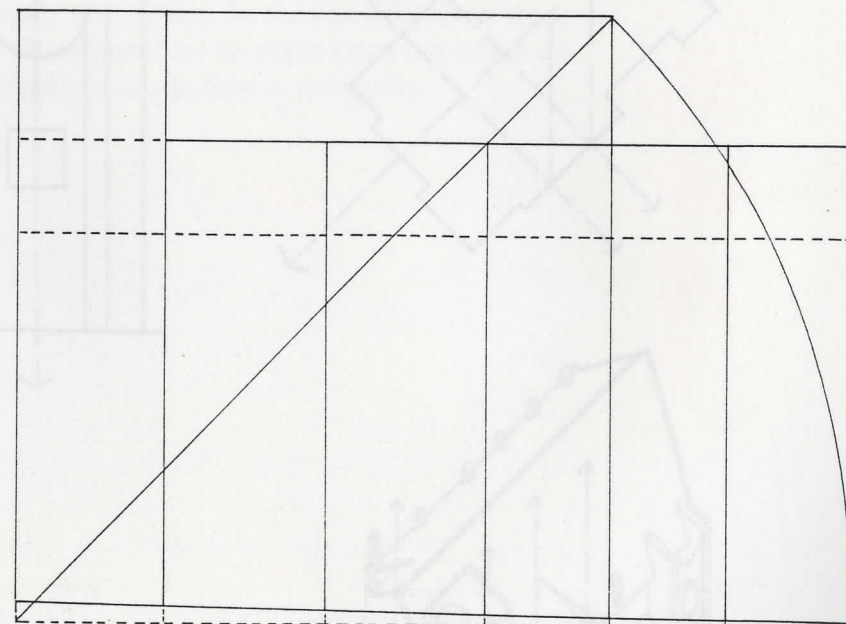
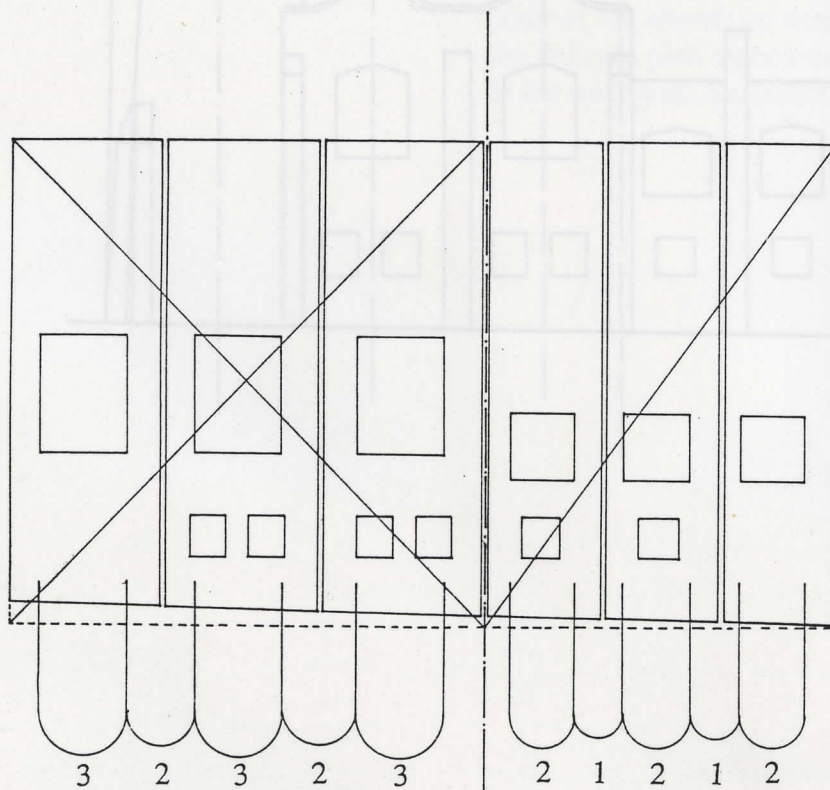
The Bay:

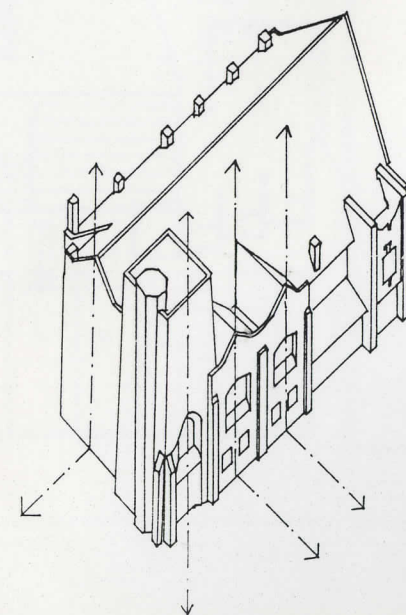
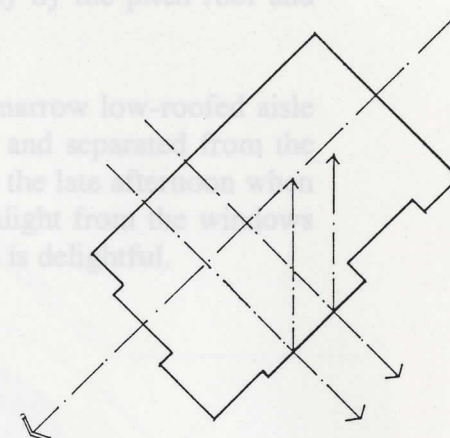
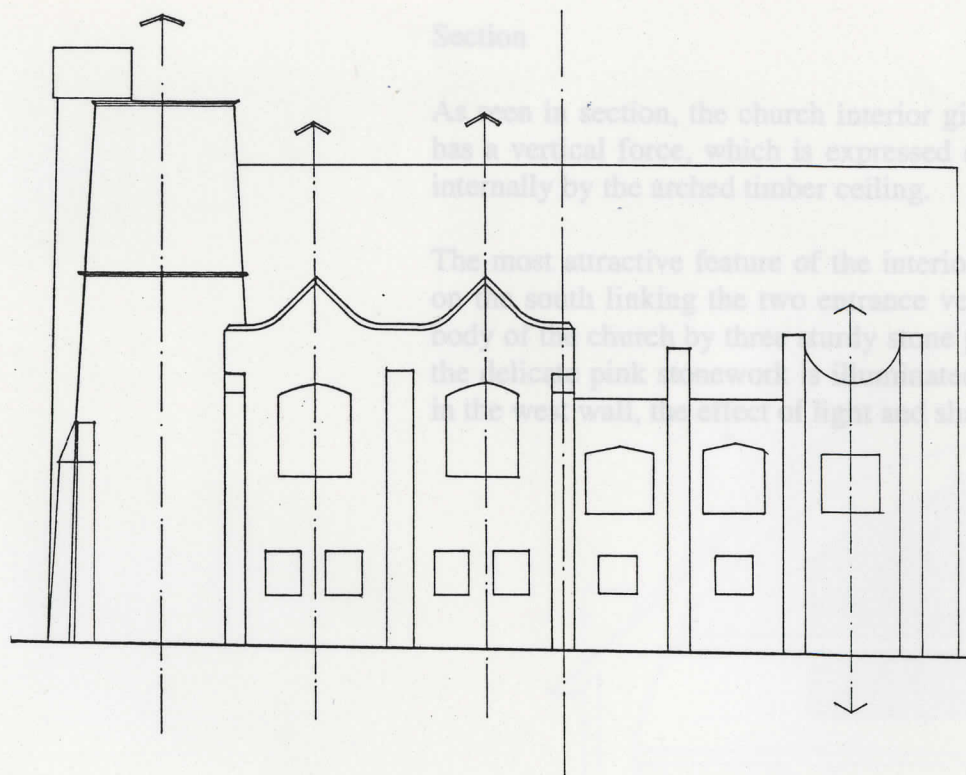
Investigations in the analysis and synthesis of an elevational phenomenon.

Since the elevation of a building (especially since the Renaissance) has traditionally been a principal vehicle for conveying architectural meaning, architectural polemic has consequently focused largely upon the art of the vertical surface. However, it was as a result of the acceptance of modern architecture's view of the city that the facade lost its preminent role and much of its capacity for conveying meaning. Eventually, architects became less and less adept at producing well-crafted elevations. It is only very recently that changes in architectural and urban sensibilities have led to renewed in the potential of the wall.

This analysis represent the investigation of only a fragment of one type of elevation: the bay of the repetitive facade. The pedagogical objectives include the following:

- to discover the extent to which in a superior work of architecture, the bay can be seen as a microcosm of the issues raised by the rest of the building.
- to study the means whereby a repetitive bay system can be used, not only to organise a building's elevation, but also, at times, as a means of articulating a building's overall organisation.
- to serve as an intuition into the depths of ostensibly flat surfaces.





Section

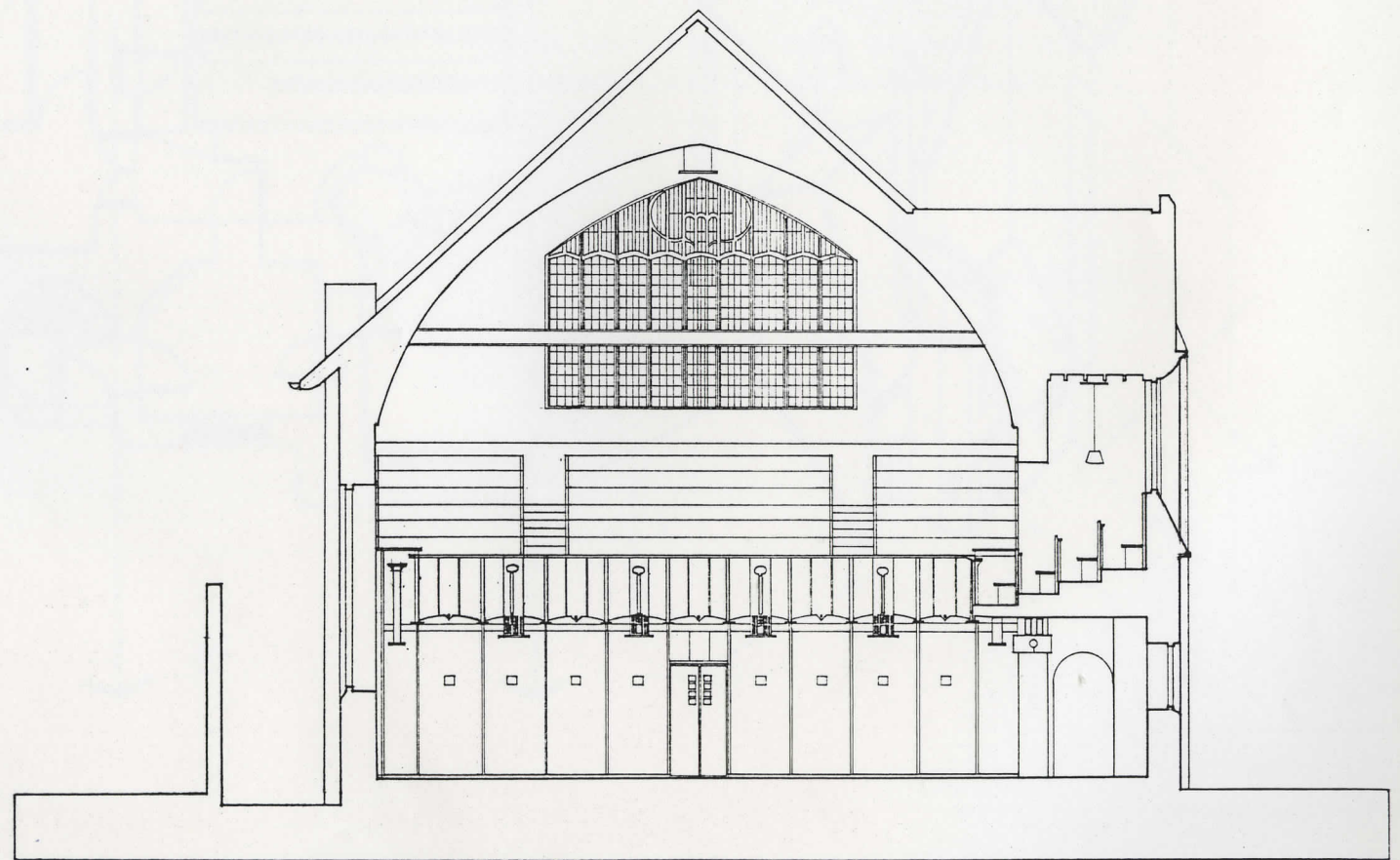
As seen in section, the church interior gives a sense of spaciousness and has a vertical force, which is expressed externally by the pitch roof and internally by the arched timber ceiling.

The most attractive feature of the interior is the narrow low-roofed aisle on the south linking the two entrance vestibules and separated from the body of the church by three sturdy stone piers. In the late afternoon when the delicate pink stonework is illuminated by sunlight from the windows in the west wall, the effect of light and shade here is delightful.



The Minister's Vestry

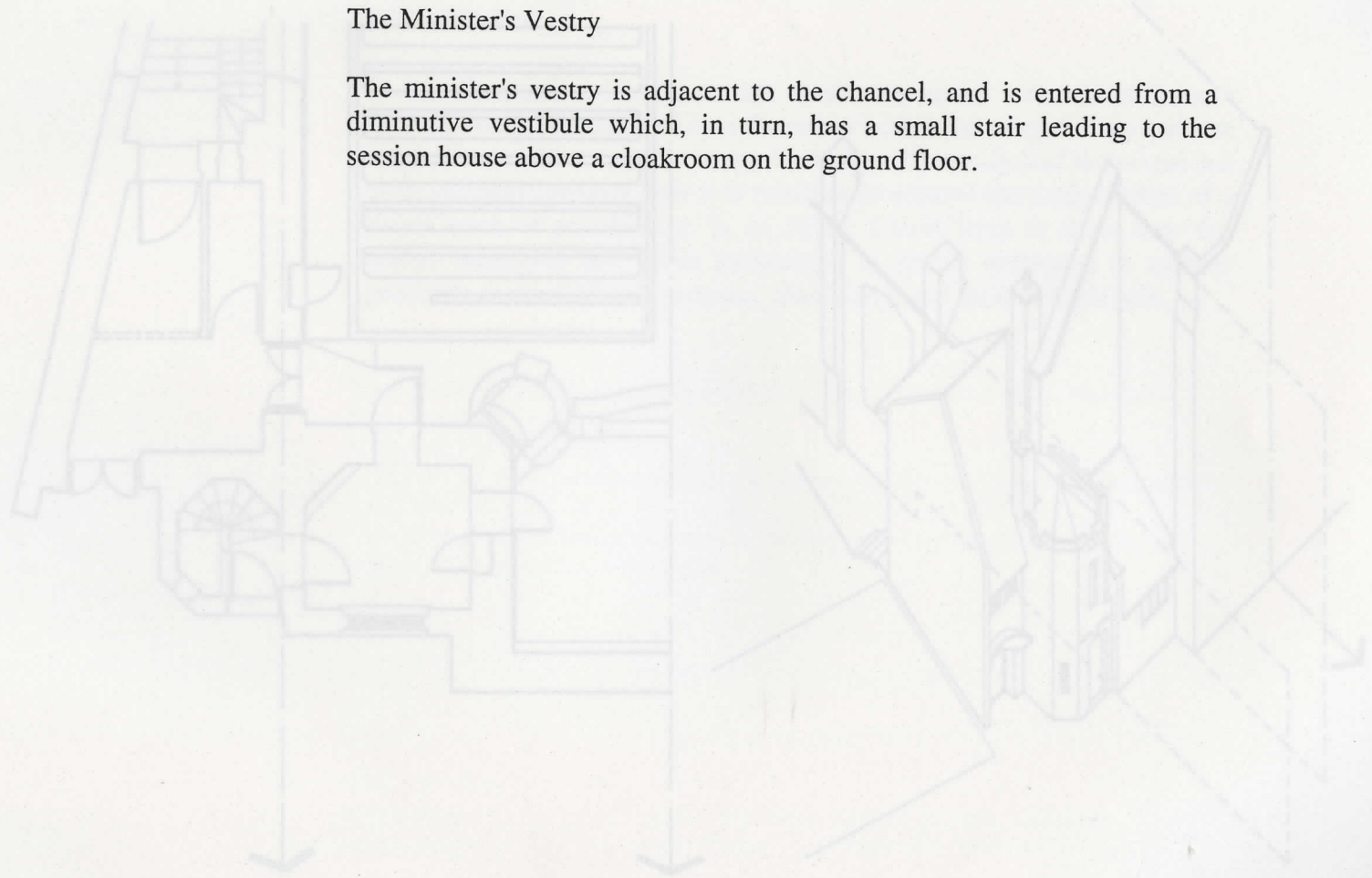
The minister's vestry is adjacent to the chancel, and is entered from a diminutive vestibule which, in turn, has a small stair leading to the session house above a cloakroom on the ground floor.

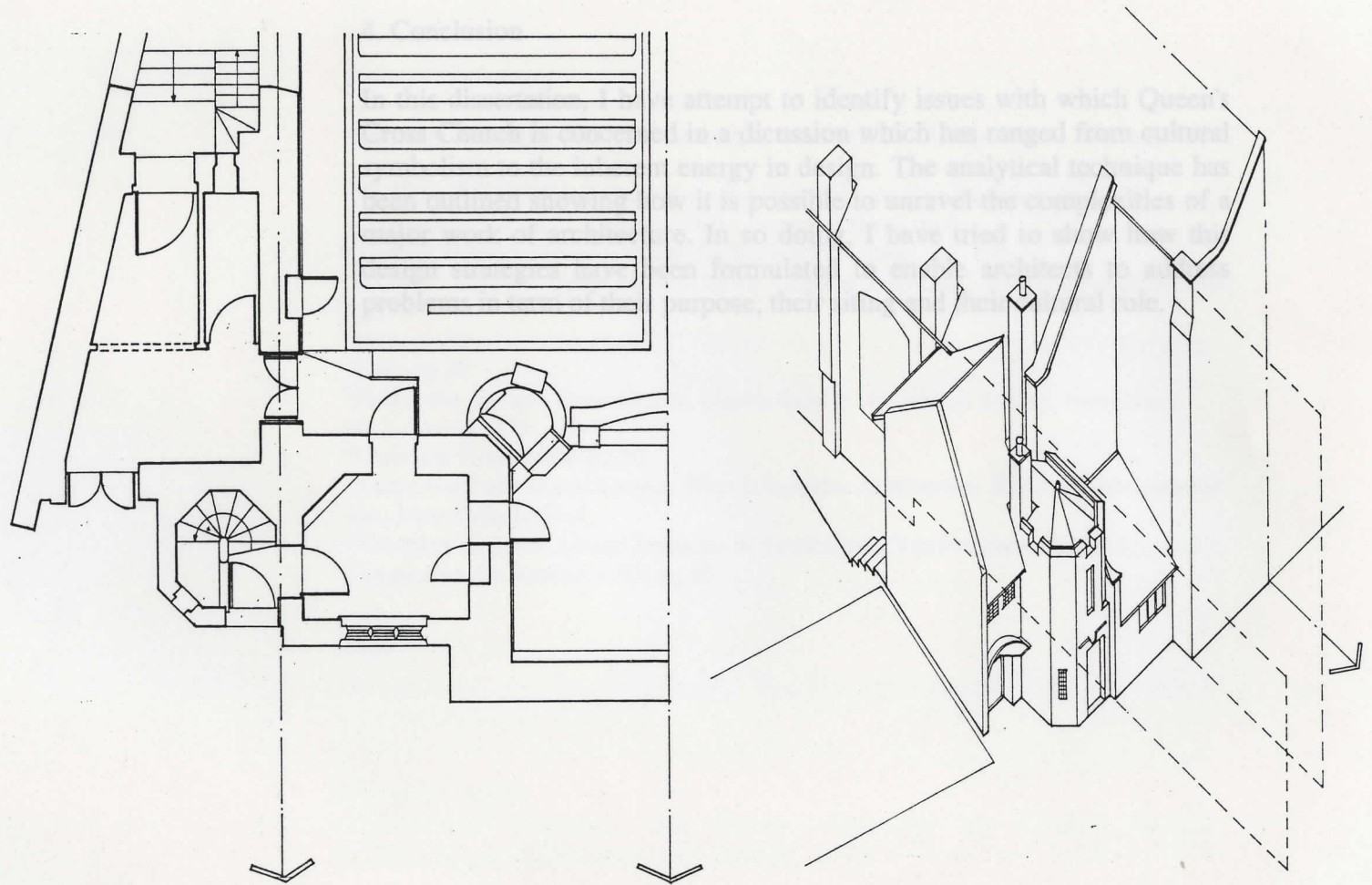


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4. Conclusion

In this dissertation, I have attempt to identify issues with which Queen's Cross Church is concerned in a dicussion which has ranged from cultural symbolism to the inherent energy in design. The analytical technique has been outlined showing how it is possible to unravel the complexities of a major work of architecture. In so doing, I have tried to show how this design strategies have been formulated to enable architects to address problems in term of their purpose, their siting and their cultural role.

¹Ibid., pp.18.

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³Fred Selby, Queen's Cross Church, Charles Rennie Mackintosh Society, Newsletter, No.7, Spring, 1973.

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⁶Geoffrey H. Baker, Design Strategies in Architecture, Van Nostrand Reinhold (International), London, 1989, pp.63.

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- ¹Christian Norberg-Schulz. *Intention in Architecture*, Cambridge, Mass., 1968, pg. 126
- ²Geoffrey H. Baker. *Le Corbusier: An Analysis of Form*, Van Nostrand Reinhold (International) Co.Ltd., London, 1989 (second edition), pg.4
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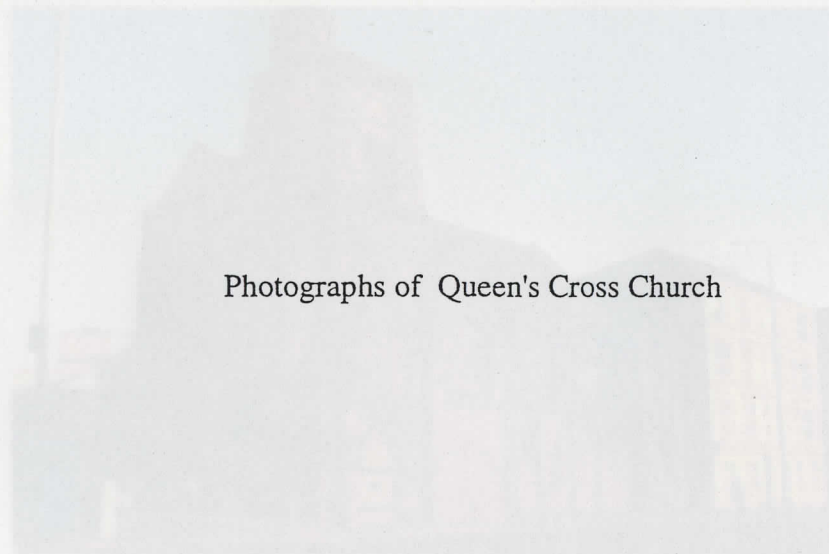
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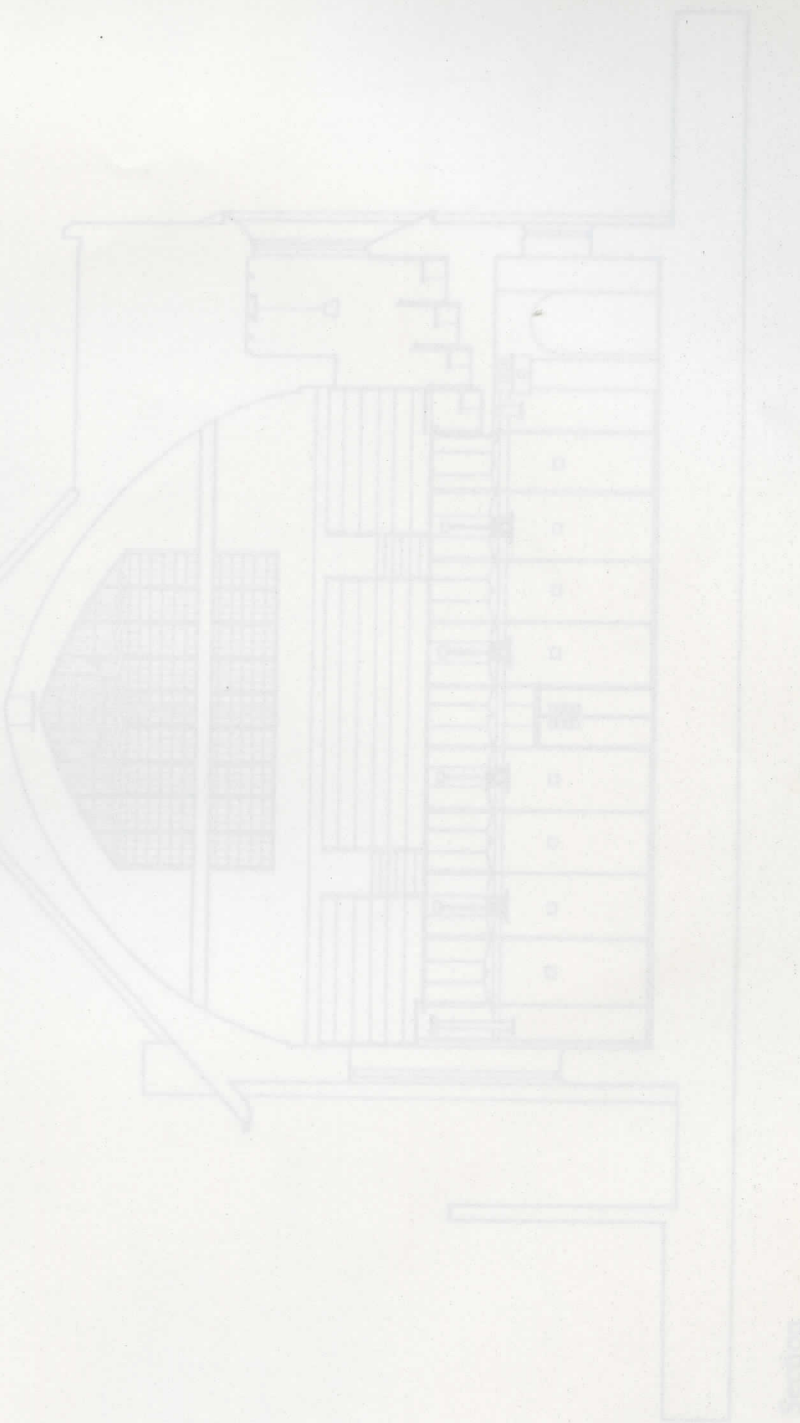


Photographs of Queen's Cross Church

Section

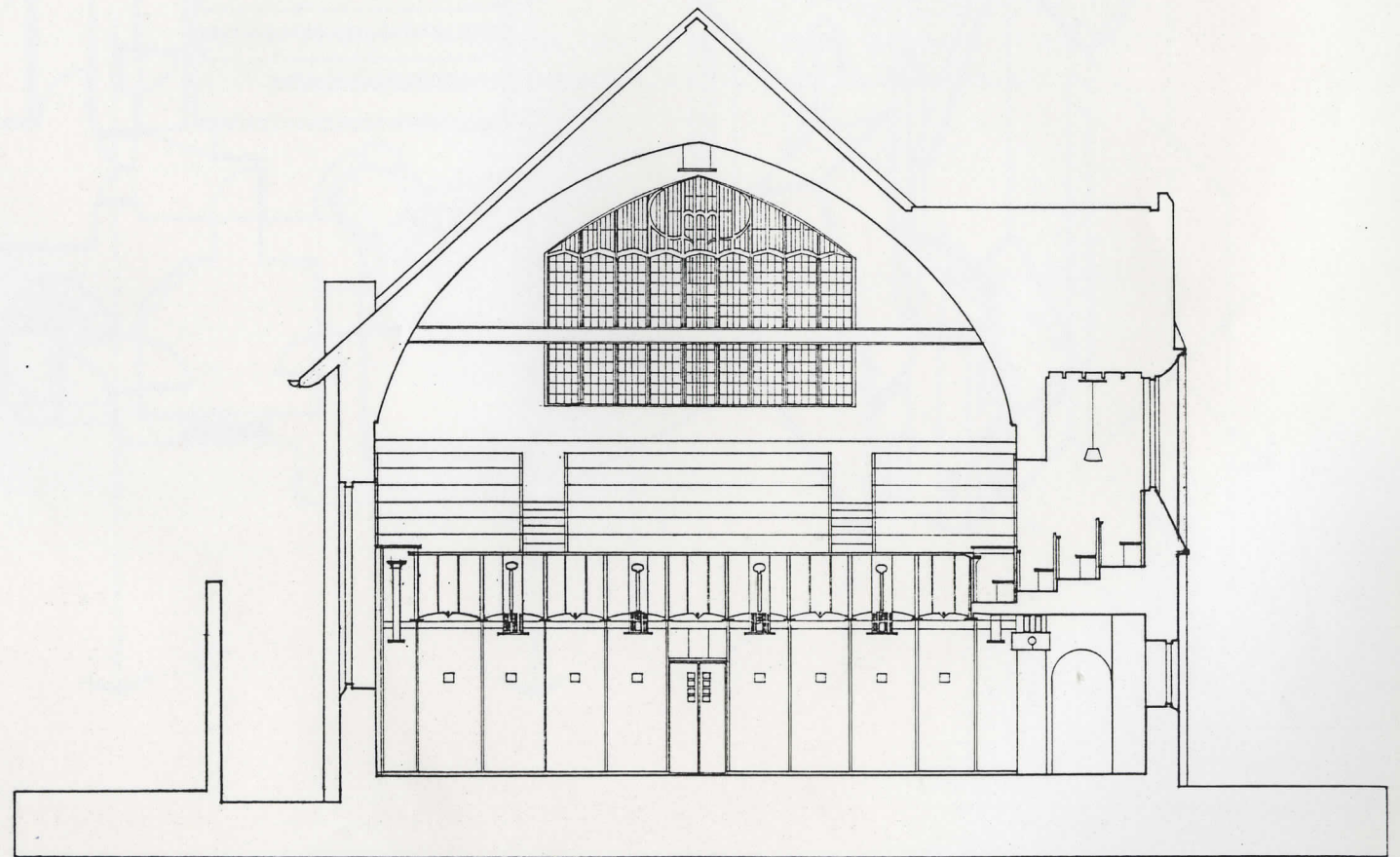
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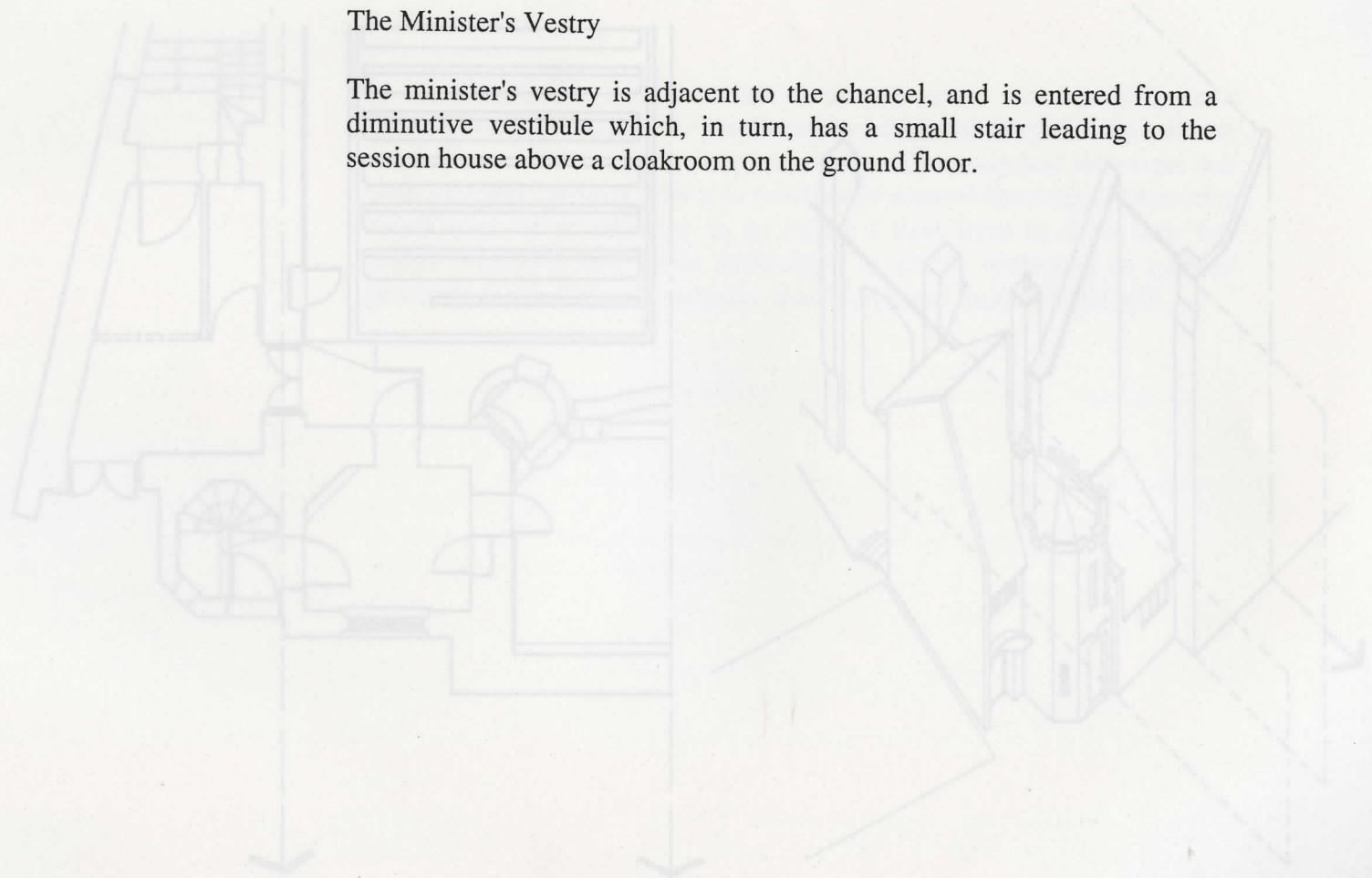
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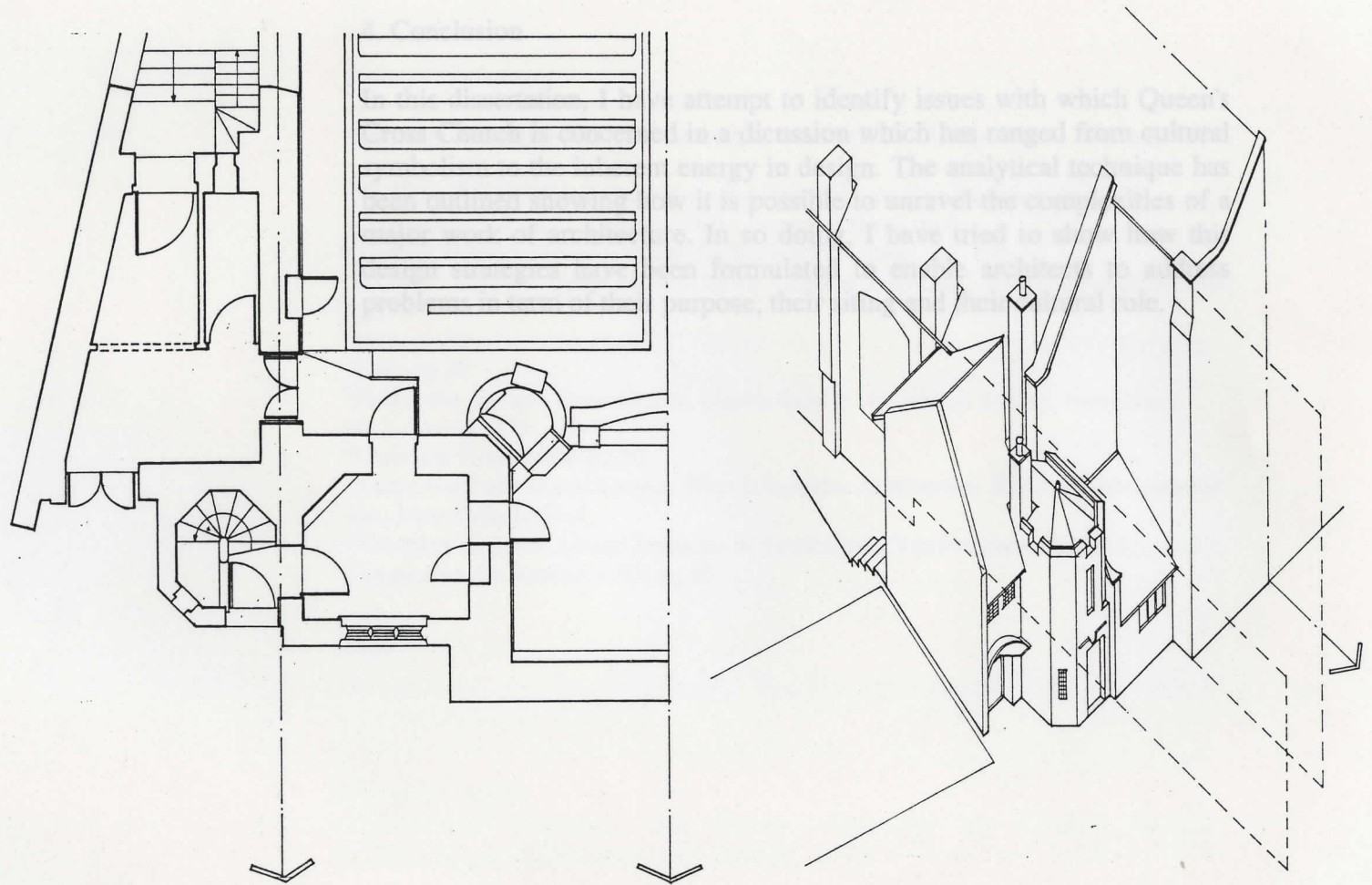


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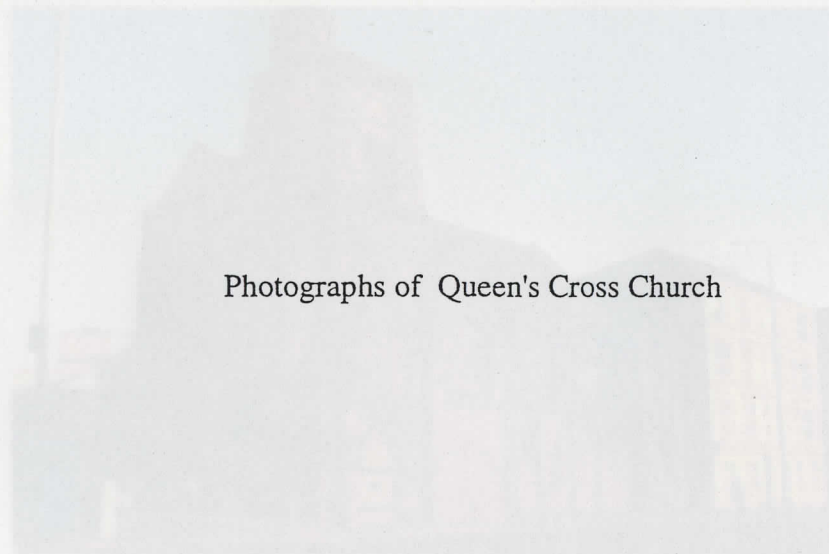
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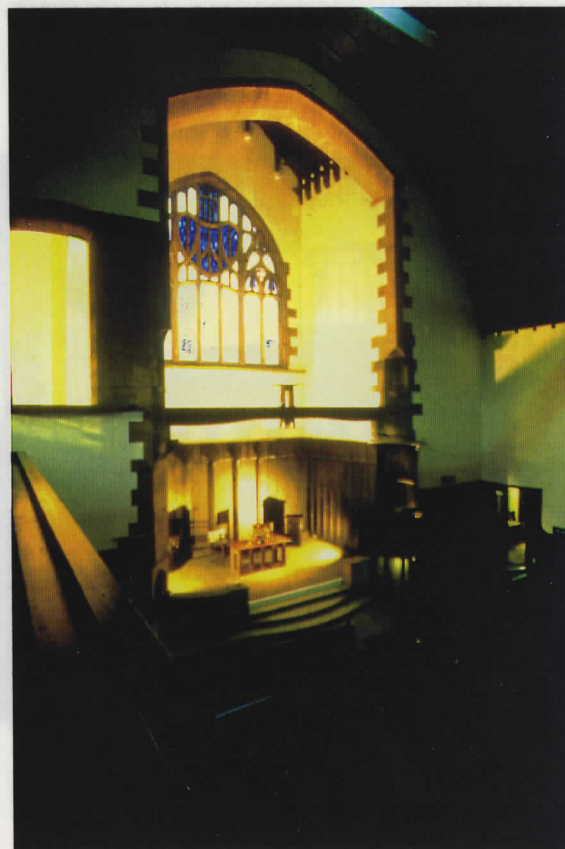


Photographs of Queen's Cross Church













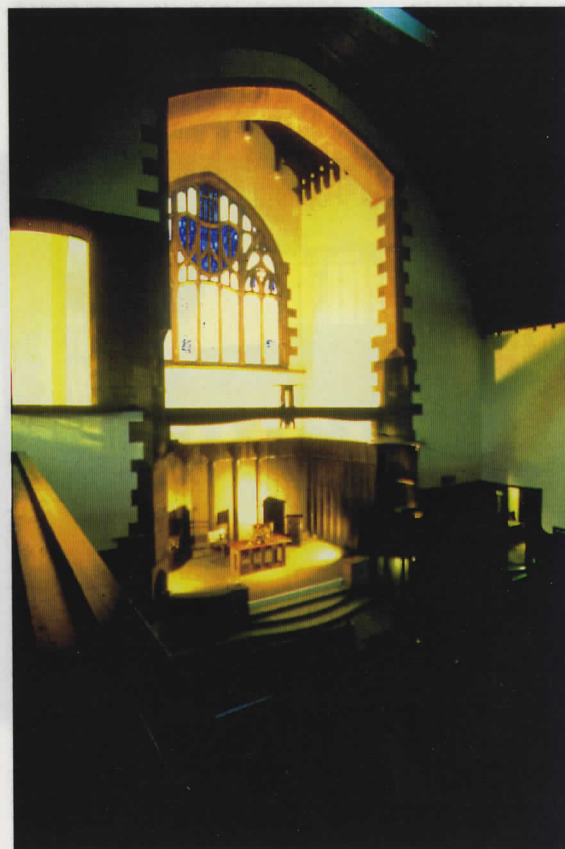










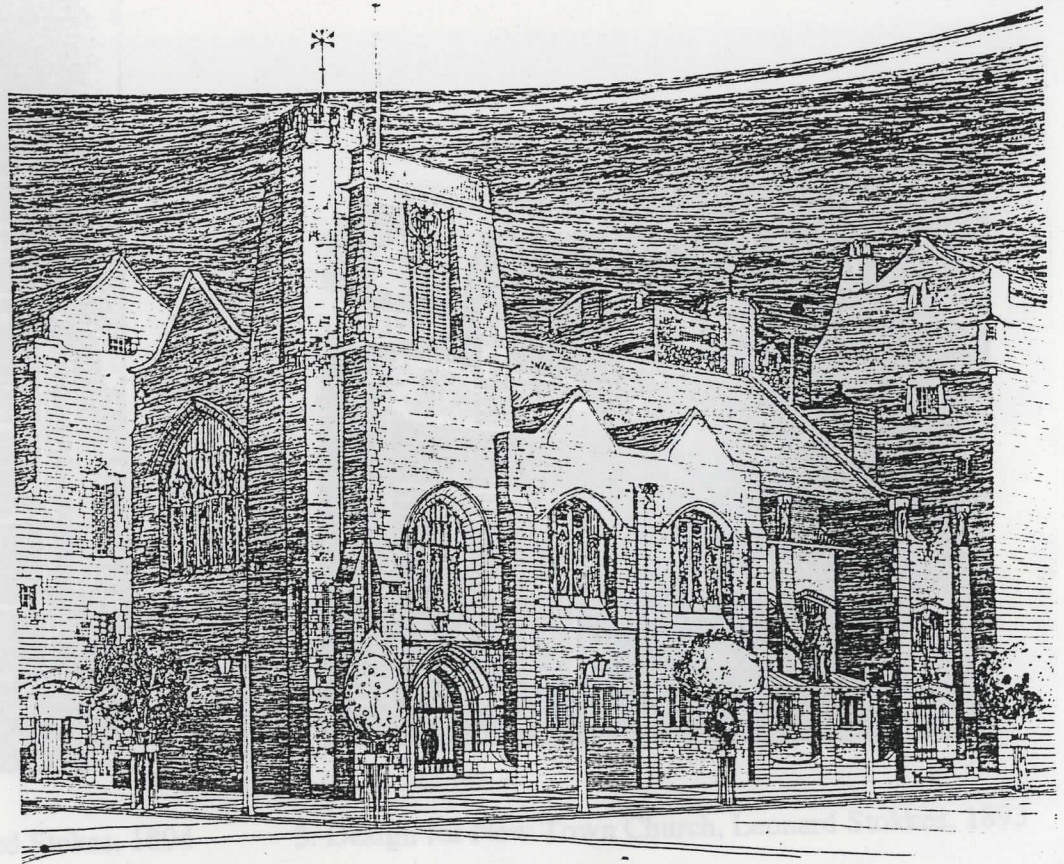






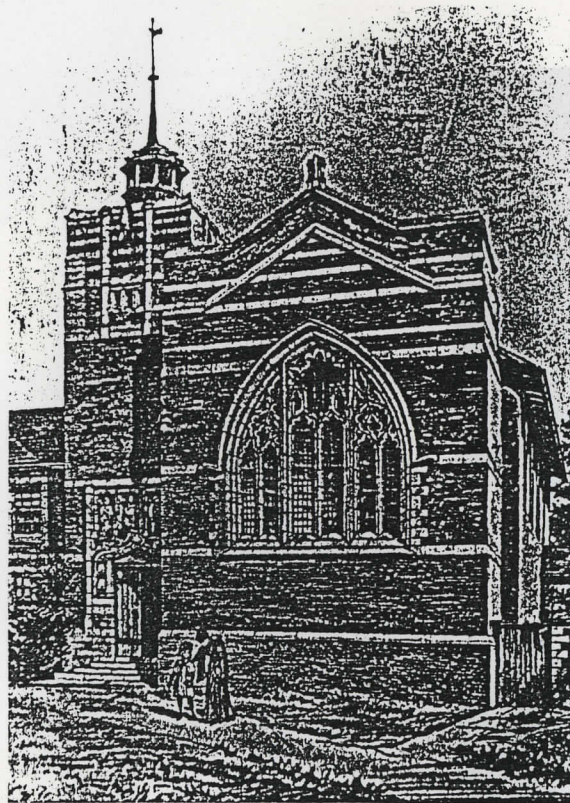




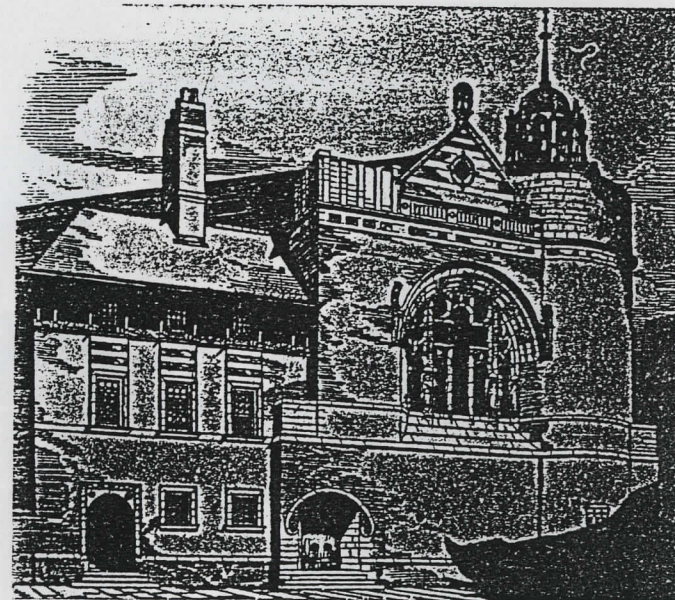


2. St. Augustine Church, Suffolk, Leamington

1. Mackintosh's Perspective

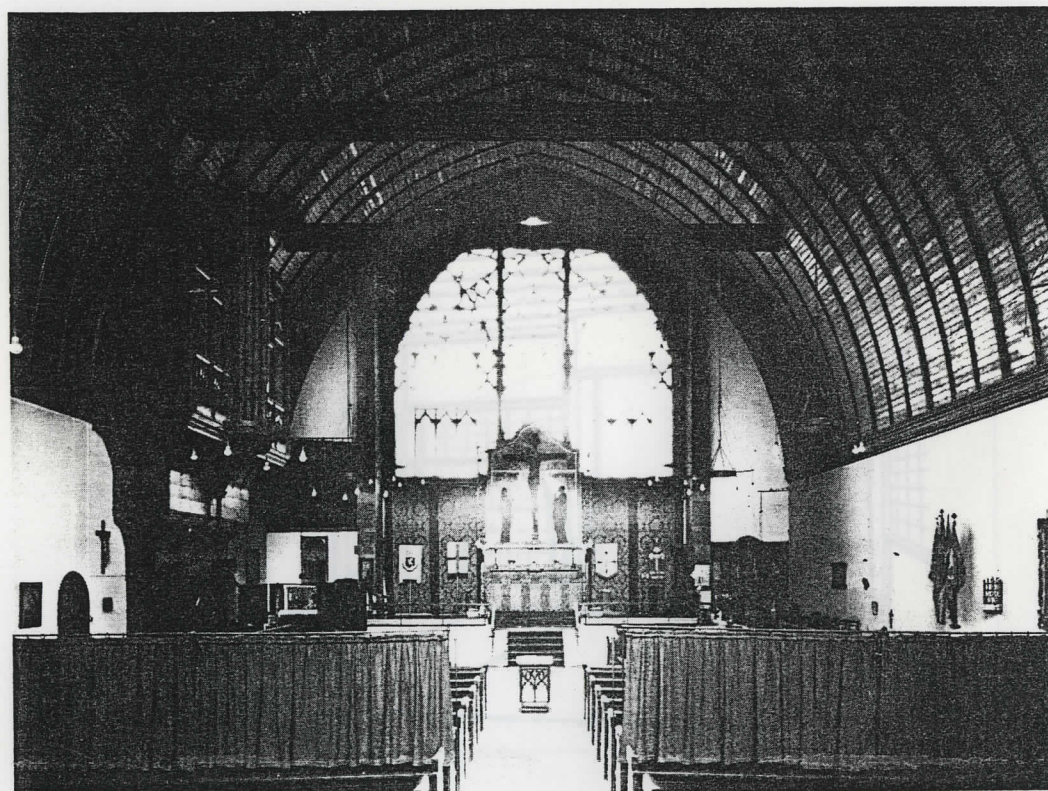


2. St. Augustine Church, Suffolk, Leonard Stokes, 1894



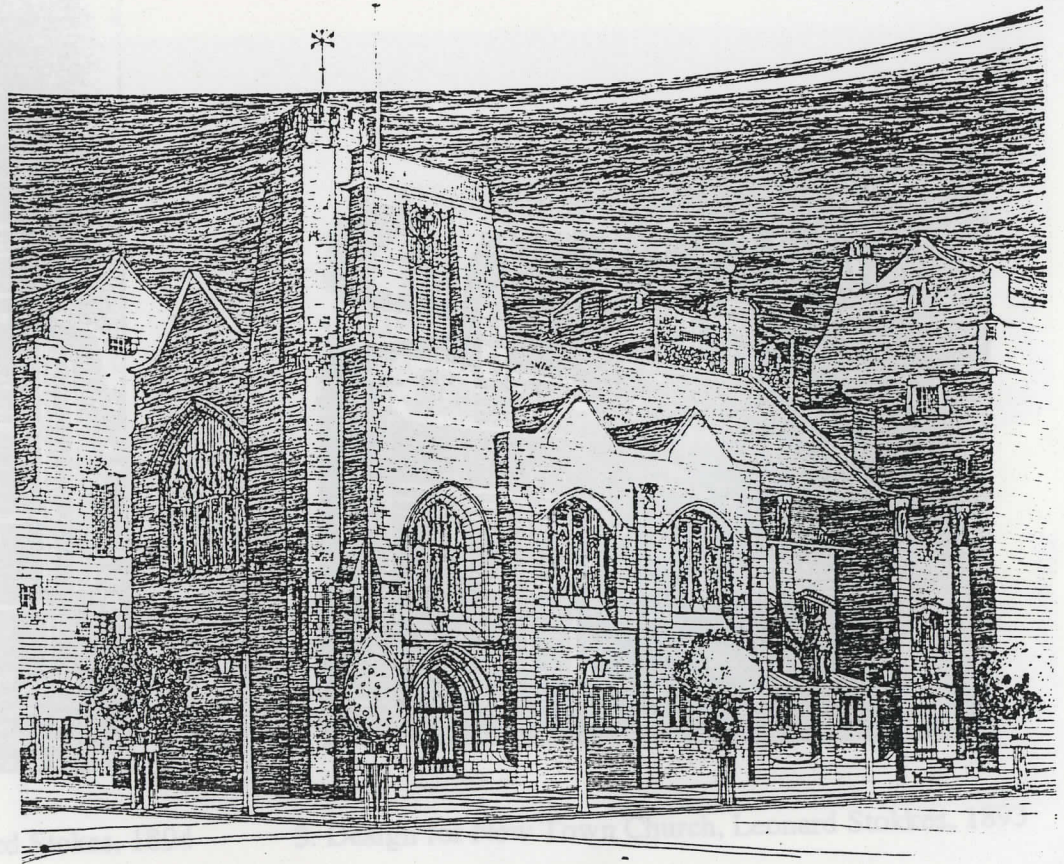
3. Design for New Town Church, Leonard Stokkes, 1893

4. Holy Trinity Church, Ladbroke Road, London, Norman Shaw, 1889



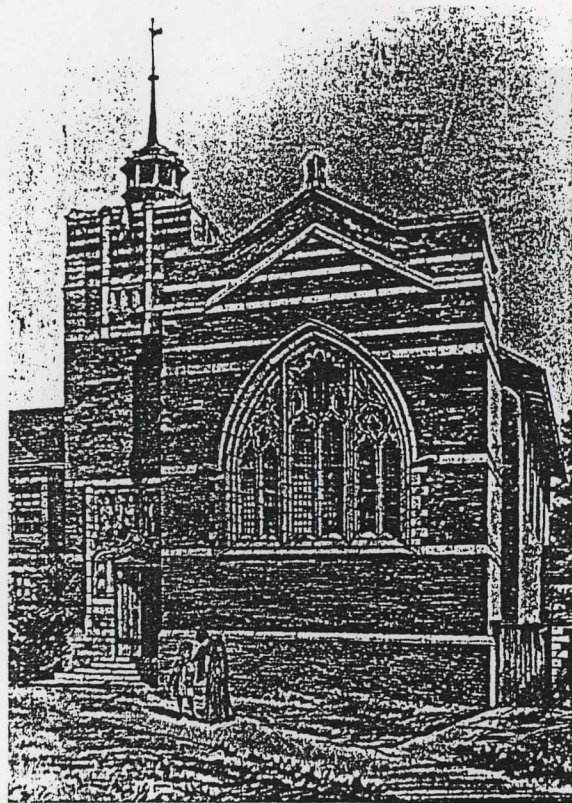
4. Holy Trinity Church, Latimer Road, London, Norman Shaw, 1889



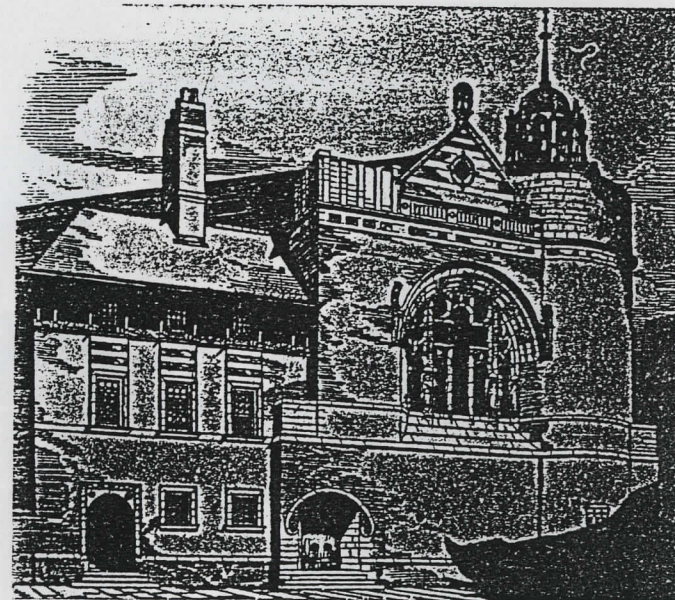


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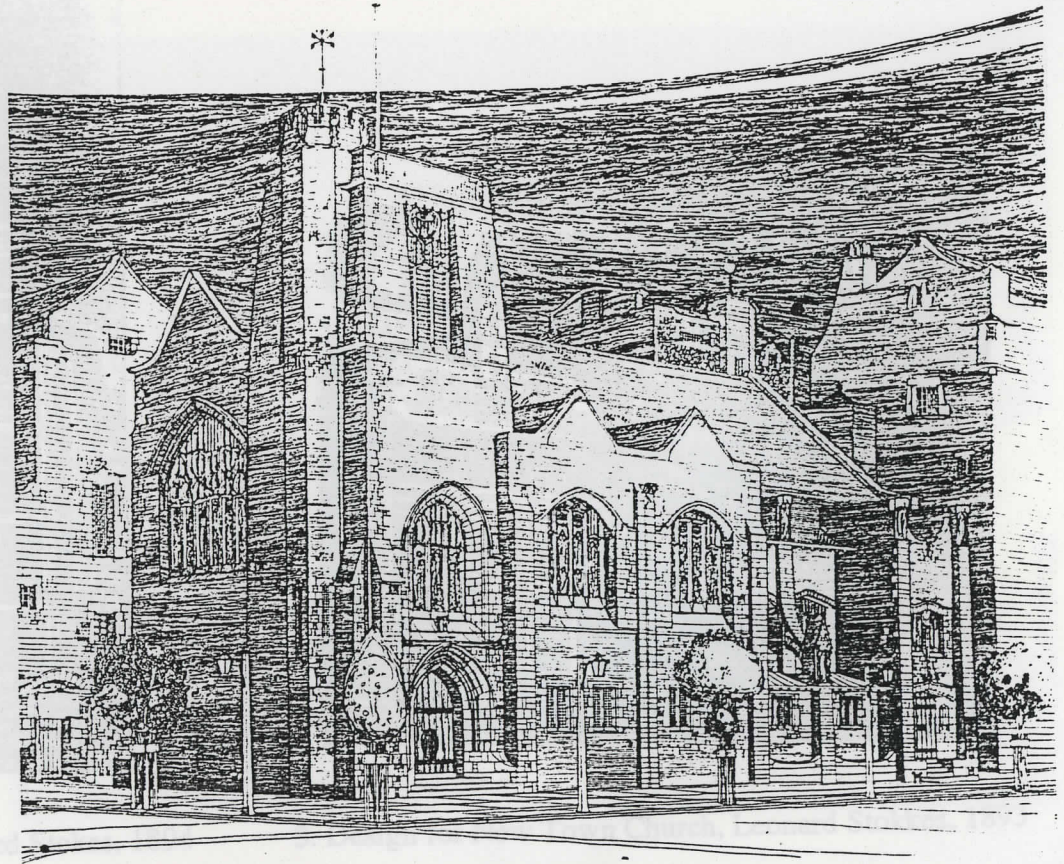
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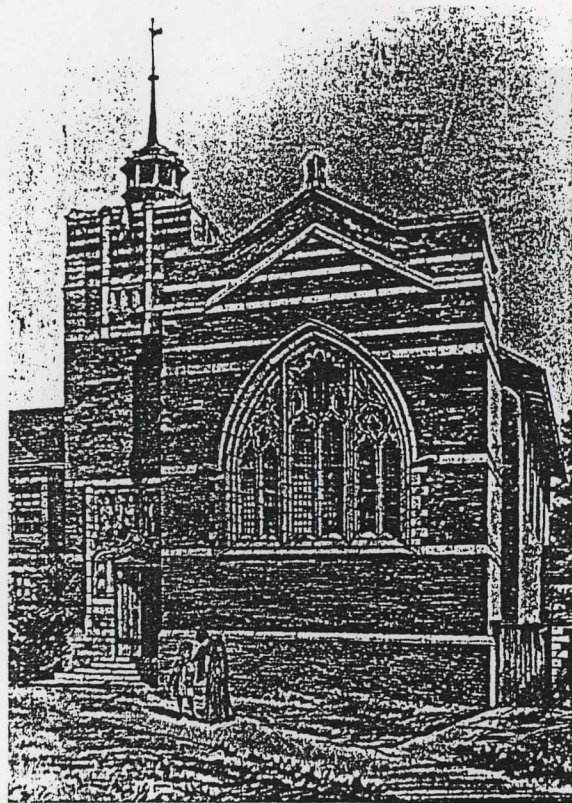




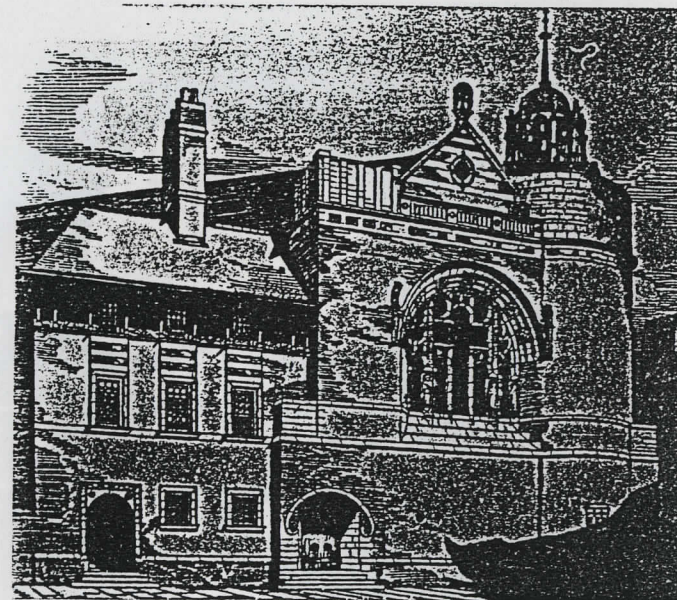


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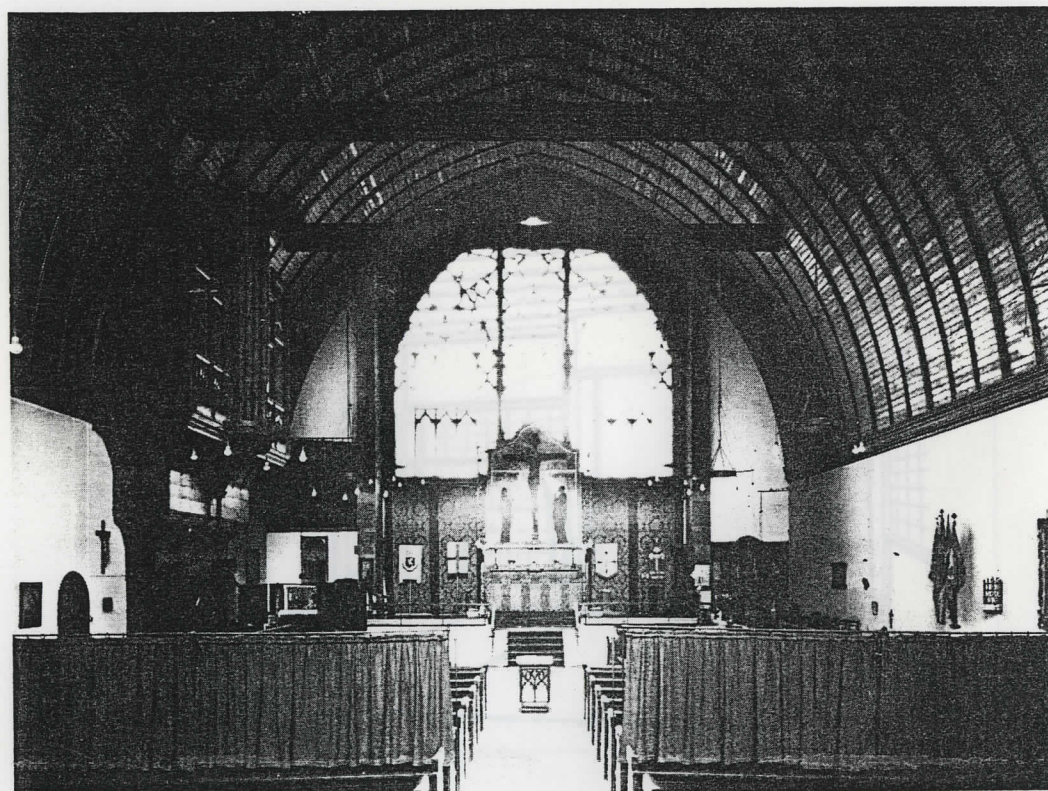


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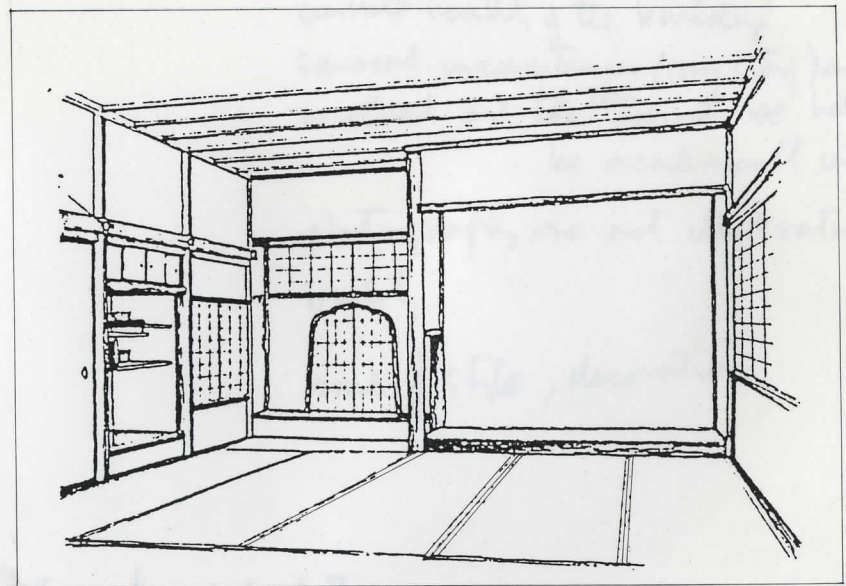


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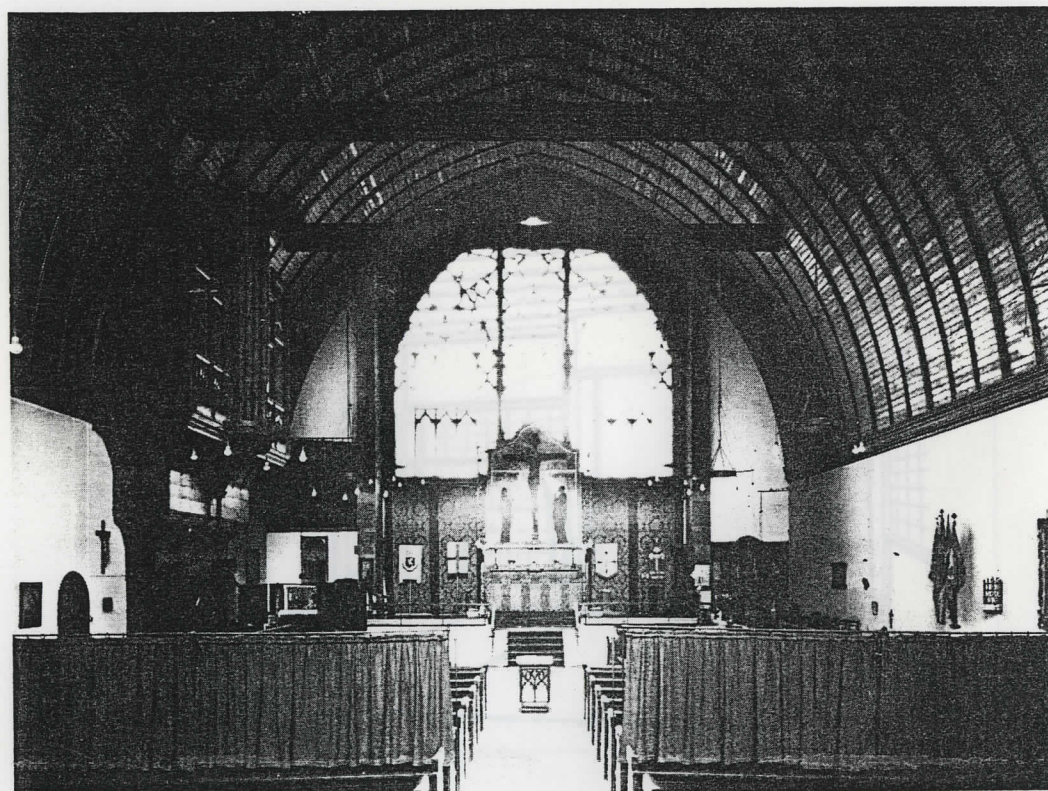
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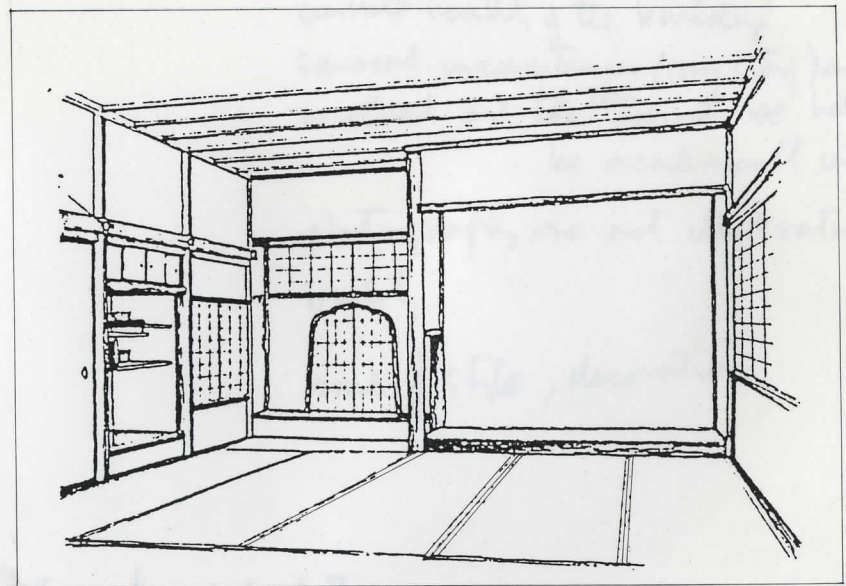
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5. Typical interior of Japanese house showing picture rail level.



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